Release

Annex to Horticulture / Landscape Supervisor Assessment Plan

Training Specification

The Horticulture Sub Group
Arboriculture, Forestry, Horticulture and Landscape Trailblazer Group
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Contents

1 Introduction

This document sets out in detail the competencies in the horticulture / landscape supervisor apprenticeship standard and to give more information on assessment and training to support the assessment plan. This can be used by training providers, assessment organisations and employers involved with the apprenticeship. It has been written by employers supported by both training and assessment providers, and explains in detail their aspirations for a horticulture / landscape supervisor apprentice.

This information will be made freely and readily available and it is hoped it will be a guide for the development and assessment of the apprentice on-programme and for the development and delivery of the end point assessments.

Ideas and information are included to help employers and training providers structure the portfolio undertaken by the apprentice on-programme that should be completed before starting the end point assessment. There is also a list of indicative technical content that aims to help all parties understand the apprenticeship standard in more detail.

This document should be used in conjunction with the Horticulture / Landscape Operative training specification. If doing the Horticulture / Landscape Supervisor apprenticeship without undertaking the operative first, both training specifications should be covered.

2 On-programme Assessment

The apprentice must complete a portfolio of evidence that meets the requirements of the training specification and the apprenticeship standard. The training specification outlines the recommended content that needs to be covered during the apprenticeship programme to meet the skills, knowledge and behavioural requirements of the standard. The portfolio is mandatory and elements of it may be used to inform questioning during the professional discussion. Supporting evidence must be collected in all seasons of the final year to allow for the student to build their portfolio. The portfolio will not be graded as part of the end point assessment, but will be the basis of the professional discussion.

The elements of the portfolio are:

a) Apprentice journal: the apprentices should record experiences gained through the learning journey and reflect on their development over the apprenticeship period; reviewing the impact of their activities and behaviours on (a) the business and (b) the team.

b) Employer appraisals: the progress of the apprenticeship should be monitored by the employer through a performance appraisal system. This will help in confirming that the apprentice is on track to complete the learning, and agree how any issues will be addressed.

To meet legislative requirements or industry standards, employers may have to ensure apprentices obtain specific evidence of training, statutory licences or approved competency cards to work or undertake activities in different parts of the sector. For example, apprentices must have appropriate evidence of training before use of abrasive wheels.

Several templates are provided in the appendices. These tools have been developed by employers and training providers to give structure to the on-programme learning and assessments. They are designed to help and are suggestions only. If the employer/provider has an existing appraisal system or learning plan, these may not be required.

Figure 1 shows how the portfolio might be developed. A template learning plan with some suggested tasks has been provided to help with planning the apprentice's experience (appendix 1). The plan and items are only suggestions and may be tailored to the specific place of work.

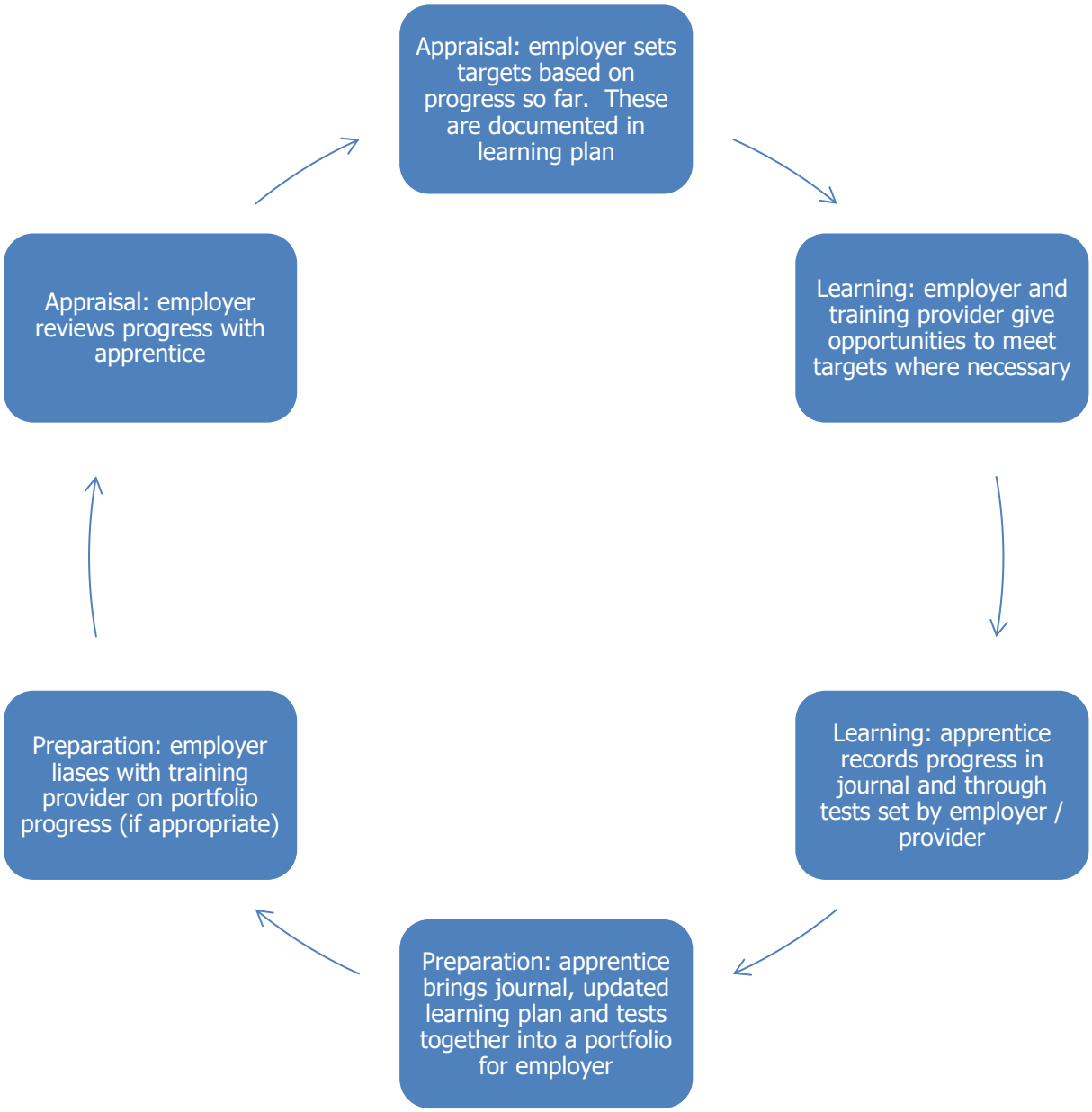

Figure 1: summary of portfolio development process

3 Indicative Content of Horticulture / Landscape Supervisor Apprenticeship

This section gives details of the scope of content to be covered in the teaching of the horticulture / landscape apprenticeship to ensure that all the learning outcomes can be achieved.

It should be considered in combination with the Horticulture / Landscape Supervisor training specification as this content is necessary for the apprentice, but has not been repeated here.

Table 1 shows how the units of learning described here cover the standard. In some areas, similar items are grouped together, in others, items that have significant amounts of content are split apart.

Table 1: unit mapping to the standard

Key: K – Knowledge, S – Skill, B – Behaviour. Units can be found in the syllabus (section 3).

Knowledge, skill and/or behaviour	Heading from Standard	Unit Number(s)
K	Industry Understanding	1
K, S	Business	2
K, S	Communication	3
K, S	Customer Care	4
K	Supervision	5
K, S, B	Health and Safety	6
K, S	Environmental	7
K, S	Plant Growth and Development	8
K, S	Tools, equipment and Machinery	9
K, S	Vegetation Control	10
K	Biosecurity	10, 13
K	Plant Identification & Classification	11
K, S	Soils and Growing Media	12
K, S	Plant Health	13
K	Protection of Biodiversity and Heritage	14
K	Assess, repair and maintain hard structures	15
S	Team Working	3
S	People management	5
S	Site presentation	8
S	Tree safety	16
K, S	Plant Propagation (H)	17
K, S	Growing media (H)	17/12
K	Aquatic environments (H)	18
S	Pruning (H)	19
S	Maintain soft landscape elements (H)	19
S	Maintenance programmes for horticultural sites (H)	19
S	Schedule work to protect existing features (H)	19
S	Use and maintain irrigation equipment (H)	20
S	Maintenance of turf (H)	21
K	Construction methods (LC)	22/23
K	Service avoidance (LC)	Undertake industry recognised training

K	Estimation techniques (LC)	24
S	Install landscape features (LC)	23/24
S	Measure and set out a site (LC)	22
S	Plan operations (LC)	24
S	Survey techniques (LC)	22
S	Abrasive wheels (LC)	Undertake industry recognised training
S	Assess and repair hard structures (LC)	25
S	Irrigation systems (LC)	23
B	Work Ethic	26
B	Change	26

Unit 1 Industry Understanding

What is this unit about?

The purpose of this unit is to give an understanding of the horticulture and landscape industries and their relevance in wider society. It will consider the breadth of the industry and the various contexts in which business is run.

Learning outcomes

	Learning Outcomes	Topic
1	The importance and benefits of green space	1.1) Health and well-being 1.2) Society 1.3) Economic 1.4) Environmental
2	The diversity of businesses within the horticultural industry	2.1) Types of organisation 2.2) Industry associations 2.3) Supply chain
3	Impact of climate change and seasonality on the industry	3.1) Impact on yourself, your business and clients
4	The diversity of the career opportunities within the horticultural industry	4.1) Breadth of career choices available within horticulture.
5	Horticulture and landscape as a professional career	5.1) Horticulture and landscape in the media 5.2) The perception of horticulture as a career 5.3) The next generation
6	Sources of information	6.1) The accuracy of information in horticultural and landscape study

Learning outcome 1: the importance and benefits of green space

Topic 1.1: health and well-being

The benefits of green space on an individual's well-being.

Topic 1.2: society

The benefits of green space within a community

Topic 1.3: economic

The benefits the horticultural industry has for the UK

- Employment
- UK value (£)

Topic 1.4: environmental

The benefits of green space to the environment

- Sustainability
- Bio-diversity
- Wildlife

- Flora and fauna
- Climate
- Air quality

Learning outcome 2: the diversity of businesses within the horticultural industry

Topic 2.1: types of organisation

Organisational hierarchies, cultures and client bases for different types of business:

- sole trader
- limited company
- partnership
- franchise
- chain
- contractor
- charity
- local authority

Topic 2.2: industry associations

The role of trade associations and professional bodies in the industry

- trade associations
- professional bodies

Topic 2.3: supply chain

The importance of the supply chain and how their employer fits in.

Learning outcome 3: impact of climatic change and seasonality on the industry

Topic 3.1: impact on yourself, your business and clients

Seasonal impacts on the business the apprentice is working in, individual work opportunities and client requirements.

Learning outcome 4: the diversity of the career opportunities within the horticultural industry

Topic 4.1: breadth of career choices available within horticulture

The breadth of career choices within the horticulture and landscape construction industries.

Learning outcome 5: horticulture and landscape as a professional career

Topic 5.1: horticulture and landscape in the media

The representation of horticulture and landscape in the media. Does this reflect horticulture as a career? How does it affect peoples' perceptions of the industry? What are the advantages of the breadth of horticultural media? To cover the growth of the industry, raising awareness and interest, consumer culture and culture of immediacy.

Topic 5.2: the perception of horticulture and landscape as a career

How is horticulture and landscape perceived as a career? What can we do to raise the profile of horticulture whilst working in the industry?

Topic 5.3: the next generation

How is the next generation of horticulturists and landscapers encouraged across the industry? The opportunities they have to train including college, university and apprenticeships. The role of the professional in encouraging and training the next generation.

Learning outcome 6: sources of information

Topic 6.1: the accuracy of information in horticultural and landscape study

An understanding of the sources of information used in study. To include:

- social media
- web sources
- peer reviewed sources
- books
- articles
- magazine and newspaper articles

Unit 2 Business

What is this unit about?

Project processes, planning work scheduling and requirements to meet specification, working to a budget.

Business operations and the impact of decisions, individual and team performance on commercial success. Have an awareness of the commercial environment including competitors and suppliers.

Supervising a project including processes, planning and specifications. Proactively solve problems by using experience and judgement and be adaptable to different priorities, environments and technologies.

Learning outcomes

	Learning Outcomes	Topic
1	Project management	1.1) Purpose and structure of a project 1.2) People and projects 1.3) Project planning and controls 1.4) Supervise a project
2	Organisations and how they work	2.1) Audience / market 2.2) Supply Chain 2.3) Quality 2.4) Understand business planning and how this impacts on a supervisor's work
3	Monitoring organisation performance	3.1) Monitoring performance 3.2) Keep business records

Learning outcome 1: project management

Topic 1.1: purpose and structure of a project

Know:

- the purpose of projects and why it is useful to define elements of work as a project
- examples of projects in horticulture
- the benefits of project management for an organisation
- success factors for projects
- the stages of a project

Topic 1.2: people and projects

Understand:

- project roles and responsibilities
- methods to manage the project team and other stakeholders

Topic 1.3: project planning and controls

- project planning and control cycle
- methods for project planning e.g. charts
- project controls – how to monitor project progress, what to do if projects are not running to plan and how to control a change to project specification at the request of clients / managers.
- the benefits of good project controls for
    - communication with managers / clients
    - efficient and effective delivery of the project

- managing change to the project in a controlled way

Topic 1.4: supervise a project

- plan a project to meet a specification, including budget, timeframes and resources.
- undertake the project to specification, including implementing project monitoring and controls.
- take decisions with reference to impact on team and commercial success.

Learning outcome 2: organisations and how they work

Topic 2.1: audience / market

Understand the audience for horticultural organisations:

- how do define the size and scope of audience
- the impact of not meeting audience needs on the organisation
- methods for understanding audience requirements e.g. surveys
- external influences e.g. political, economic etc…

Topic 2.2: supply chain

Understand the importance of supply chain considering

- suppliers
- contractors
- ethics
- supply chain assurance
- distributors

Topic 2.3: quality

Understand quality management systems and practices in horticultural organisations for staff, suppliers and contractors.

- important aspects of quality in the sector
- formal quality standards or approval e.g. trade association accreditation schemes, Plant Passports, British Standards
- informal systems and practices to achieve quality
- impact if required quality is not achieved

Topic 2.4: Understand business planning and how this impacts on a supervisor's work

Understand the business planning documents that will direct work of teams e.g. business plans or site management plans

Interpret documents for staff so they understand how their work relates to the organisation's wider goals.

Use plans to direct work and make sure that it achieves the organisation's wider goals.

Learning outcome 3: monitoring organisational performance

Topic 3.1: monitoring of organisational performance

Know how and why records are used in monitoring organisational performance.

To include:

- managing costs
- financial efficiency
- monitoring against targets

- budgets
- previous periods
- relevant review periods i.e. weekly, monthly, annually
- appropriate remedial actions
- staff roles in recording and analysing information.

Topic 3.2: keep business records

Keep accurate financial records to include:

- purchasing and ordering
- deliveries and receipts
- invoice and sales
- payments

Keep accurate records to include:

- staffing
- resource use
- data protection
- legal requirements e.g. pesticides
- work progress
- health and safety
- client / employer requirements

Unit 3 Communication

What is this unit about?

The aim of this unit is to provide the learner with the knowledge, understanding and skills required to communicate information within the workplace

Learning outcomes

	Leaning Outcome	Topic
1	The principles and techniques of work-related communication	1.1) The importance of clear and unambiguous communication 1.1) Different forms of communication aids and their use 1.1) The value of effective and timely communication in customer care
2	Communicate work related information	2.1) Communicate with others, including team, clients, the public and colleagues 2.2) Use basic IT systems when communicating

Learning outcome 1: the principles and techniques of work-related communication

Topic 1.1: understand the importance of clear and unambiguous communication

Know communication techniques used to gain and maintain the attention and interest of an audience.

- understand the purposes of communication to:
  - exchange information
  - make or confirm arrangements
  - persuade staff or customers
  - make plans
  - develop skills and knowledge
  - build or maintain relationships
  - delegate tasks to team
  - advise team where performing well or under-performing

- know:
  - the level of detail which may be required and the need for clarity
  - the importance of confirming information and why this should be acknowledged and accurately recorded
  - the importance of explaining to others the level of confidence that can be placed on the information being communicated
  - the relevant legislation in receiving and sending information

Topic 1.2: the different forms of communication aids and their use

Know:

- the different methods for communicating information and the ways it may need to be adapted to suit the audience
  - written: e.g. letters, reports
  - electronic: e.g. emails, texts
  - verbal: e.g. telephone calls

    - face to face: e.g. meetings, presentations
    - distance: e.g. video conferencing
- the principles of effective written business communications
- the principles of effective verbal communications in a business environment
- the principles of effective IT communications in a business environment
- the advantages and disadvantages of different methods of communication for different purposes

Topic 1.3: the value of effective and timely communication in customer care

Understand:

- the importance of effective communication in customer service
- how tone of voice, choice of expression and body language can affect the way customers perceive their experience
- why 'customer service language' is used
- verbal and non-verbal signals that show how a customer may be feeling
- the types of information needed when communicating verbally with customers
- when information may be required urgently
- why it is important to take messages accurately and the potential effects of not doing so
- the situations in which confidentiality needs to be maintained
- the importance of handling customer complaints

Learning outcome 2: communicate work related information

Topic 2.1: communicate with others, including team, clients, the public and colleagues

Be able to:

- identify the information to be communicated
- confirm that the audience is authorised to receive the information
- provide accurate information using appropriate communication method e.g. verbally, in writing etc.
- communicate in a way that the listener can understand, using language that is appropriate to the topic
- confirm that the listener has understood what has been communicated
- communicate clearly, concisely and professionally with people
- where communication is in writing, use correct grammar, spelling, sentence structure and punctuation
- able to pass on messages accurately, receive and forward on information
- identify customers' wants and priorities
- listen 'actively' to what people are saying
- use a tone of voice and expression that reinforces messages when communicating
- use language that reinforces empathy with people
- adapt their response in accordance with peoples' changing behaviour
- provide information and advice that meets customers' needs
- maintain organisational standards of behaviour and communication when interacting with people
- check that people have understood what has been communicated
- adhere to organisational policies and procedures, legal and ethical requirements when communicating verbally with people
- escalate any problems that cannot be resolved by yourself

Topic 2.2: use basic IT systems when communicating

- use IT for checking / monitoring works carried out by the team, which might include handheld devices / computer software
- use mobile phones for making calls
- send / receive emails

Unit 4 Customer Care

What is this unit about?

To provide learners with an understanding of the importance of customer care in horticulture.

Learning outcomes

	Leaning Outcome	Topic
1	Different types of customers	1.1) The distinctions between internal and external customers 1.2) How cultural factors can affect customers' expectations 1.3) Characteristics of challenging customers 1.4) How to identify dissatisfied customers
2	The impact of customer care on the organisation	2.1) How achievement of the customer service offer enhances customer loyalty 2.2) The relationship between customer satisfaction and organisational performance 2.3) How the reputation and image affects customers' perceptions of products and/or services 2.4) The potential consequences of customers' dissatisfaction 2.5) Different methods of attracting customers and retaining their loyalty
3	Customer service delivery	3.1) The relationship between customers' needs and expectations and customer satisfaction 3.2) The importance of treating customers as individuals 3.3) The importance of balancing promises made to customers with the needs of an organisation 3.4) When and to whom to escalate problems 3.5) Methods of measuring own effectiveness in the delivery of customer service
4	Supervising teams to deliver customer service	4.1) Organisational policies, procedures, values & expectations of providing customer service delivery to team members 4.2) Provide practical support to team members who are experiencing difficulties with customers
5	How to display items for sale	5.1) Customer flow and space layout of a given land based outlet 5.2) Product display systems

		5.3)	Influence of legislation on goods displayed
6	Methods of promotion and marketing	6.1) 6.2) 6.3)	Methods of promotion Marketing strategies for given land based outlets Recommend improvements to a given marketing strategy
7	The principles of ordering, pricing and controlling stock	7.1) 7.2) 7.3)	Buying and ordering processes Stock control and storage methods Pricing methods

Learning outcome 1: different types of customers

Topic 1.1: distinctions between internal and external customers

Understand:

- internal customers (colleagues, supervisors, staff working in other departments)
- external customers (outside of your organisation, customers obtaining products and/or services)
- distinctions between internal and external customers:
    - knowledge and understanding of systems and procedures
    - expectation of service
    - communication styles

Topic 1.2: how cultural factors can affect customers' expectations

Understand how cultural experience has a direct impact on customer expectations:

- cultural factors:
    - language
    - nationality
    - age
    - beliefs
    - social attitudes and behaviours (formality of greeting, professional behaviours, personal space, social interactions)
    - language (tone of voice, communication style)
    - values (perception of right or wrong, ethics, environmental responsibility, lifestyle)
- customer expectations
    - service delivery (responsiveness, reliability, speed, professionalism, personalisation, attitude, behaviour)
    - products and/or services (ethically produced and sourced, kind to environment, locally sourced, value for money)
    - awareness of cultural differences (customers tend to match their expectations to their own cultural practices and experiences)

Topic 1.3: the characteristics of challenging customers

- challenging customers: any customer where communication difficulties and interactions need to be overcome
- challenging customers and their characteristics:
    - impolite (shouting, raised voice, inappropriate language)
    - angry
    - impatient

- frustrated
- argumentative
- distressed

Topic 1.4: identify dissatisfied customers

Know how to identify dissatisfied customers:

- unhappy with product offer or purchase
- unhappy about service received from an organisation
- do not make repeat purchases, those who give negative reviews

Signs to help identify dissatisfied customers:

- complaints received (letters/e-mails, telephone, face to face)
- customer reviews (social media, surveys)
- body language (crossed arms, angry facial expression, hand/arm movements)
- tone of voice (raised, shouting)

Learning outcome 2: the impact of customer care on the organisation

Topic 2.1 how the achievement of the customer service offer enhances customer loyalty

Understand the service offer:

- extent and limits of customer service an organisation offers (pricing and range of products unique to an organisation)
- Service Level Agreements (SLAs)
- what an organisation will do to meet/exceed customer needs

Understand achievement of customer service offer:

- customer satisfaction (positive feedback, meeting and exceeding customer expectations, customer loyalty)
- increase sales of products and/or services as a result of positive recommendations by friends, family, other customers

Understand how customer service enhances customer loyalty:

- increase in customer confidence
- trust in service offer
- commitment to organisation

Topic 2.2: the relationship between customer satisfaction and organisational performance

Understand customer satisfaction:

- needs and expectations are met
- delivering products and/or services on time and according to organisational procedures
- going the 'extra mile'

Understand relationship to organisational performance:

- repeat business
- increase customer spend
- customer loyalty
- achieving or exceeding agreed performance targets (sales, service level agreements)

Topic 2.3: how reputation and image affects customers' perceptions of products and/or services

Understand reputation:

- organisational values, ethical/non-ethical (fair-trade, sustainability, environment, human/animal rights)
- standard of products and/or services provided (quality, price)
- legal compliance
- market leader
- size of organisation

Understand image: brand; professional; trustworthy; competent; reliable; competitive

Understand effect on customers' perceptions of products and/or services:

- alters customers' expectations (expectations increased/reduced depending on whether reputation and/or image is positive or negative)
- demands change (realistic, unrealistic)

Topic 2.4: causes and potential consequences of customers' dissatisfaction

Understand potential consequences of customer dissatisfaction:

- failure to meet expectations in products supplied and/or service provided
- uncompetitive price charged for products and/or services
- mis-selling of products and/or services (unknowingly or deliberate)
- damage to organisation's reputation
- loss of income and customers
- fall in profits
- loss of staff (redundancies, staff leavers)
- demotivation of staff
- loss of business opportunities

Topic 2.5: methods of attracting customers and retaining their loyalty

Know methods to attract customers:

- promotions (sales, discounts, offers, incentives, events)
- advertising campaigns (in-house, local/national media, social media sites, internet, mail shots, personal letters and e-mails)
- recommendations
- unique service offer

Know methods to retain customer loyalty:

- loyalty schemes (cards, discounts, money off coupons, cash back, exclusive events, targeted vouchers/coupons)
- providing exceptional customer service
- exceeding customer expectations
- excellent product offer
- competitive pricing for products and/or services

Learning outcome 3: understand customer service delivery

Topic 3.1: the relationship between customers' needs and expectations and customer satisfaction

Understand:

- customer needs: results in positive impact on customer satisfaction and return sales
- customer expectations: shaped by service offer, marketing materials and organisational reputation; results in customer retention and long-term customer relationships
- customer satisfaction: based on customer perception of quality

Topic 3.2: the importance of treating customers as individuals

Understand the importance of treating customers as individuals: e.g. customer satisfaction; customer loyalty; customer retention; compliance with legislation (Equality Act 2010)

Topic 3.4: the importance of balancing promises made to customers with the needs of an organisation

Understand the importance of balancing promises made to customers to an organisation's needs: e.g. achievement of organisational objectives, budget restrictions, consistency and transparency of organisational practices

Topic 3.5: when and to whom to escalate problems

Know:

- when to escalate problems: in line with escalation procedures; dealing with a complaint or problem outside own authority; lack of knowledge/experience from the customer service assistant

- to whom to escalate problems: managers; supervisors; more experienced colleagues; suppliers; manufacturers

Topic 3.6: methods of measuring own effectiveness in the delivery of customer service

Understand measures: feedback from others; sales targets being met and exceeded; customer complaints; direct feedback from customers

Learning outcome 4: supervising teams to deliver customer service

Topic 4.1: organisational policies, procedures, values & expectations of providing customer service delivery to team members

Communicate to team members the organisations policies, procedures, values & expectations of effective customer service delivery, ensuring they have been fully understood and offering the team any training, coaching required to ensure they behave as expected

Encourage team to provide feedback from customers – good and bad in order to learn from it

Topic 4.2: provide support to team members who are experiencing difficulties with customers

Ensure the organisations customer service and complaints procedures are followed

Identify workable options for resolving problems within organisational guidelines

Ensure operate within own authority limits for resolving customers problems and making promises

Learning outcome 5: understand how to display items for sale

Topic 5.1 customer flow and space layout of a given land based outlet

Understand customer flow of a given land based outlet in relation to the direction of customer movements, and clarity of store layout aiding customer flow, e.g. store design and plan including position of entrance and exit, signage location and clarity, location of tills, aisle widths, access for customers including those with disabilities location of promotional offers.

Topic 5.2: product display systems

Understand product display systems of a given land based outlet in relation to product groupings (e.g. by category of product, by species, according to perishability, seasonality, special promotions), types of display, location of displays.

Topic 5.3: influence of legislation on goods displayed

Understand how relevant legislation influences the display of goods in a land based outlet. Relevant legislation would include: Sale of Goods Act 1968 (as amended 1979 & 1994), Trades Description Act 1968, Weights and Measures Act 1985, Consumer Protection Act 1987 (as amended 1994), Price Marking Order 2004.

Learning outcome 6: methods of promotion and marketing

Topic 6.1 methods of promotion

Know different methods of promotion, to include advertising in different media, (e.g. radio, newspaper, internet, television), public relations and sponsorship, special offers and discounts, direct mailing.

Topic 6.2: marketing strategies for given land based outlets

Understand marketing strategies for outlets to include strategies relating to

- product (e.g. product design, product range, packaging)
- price
- promotion (e.g. advertising, Public Relations and sponsorship, special offers and discounts, direct mailing)
- place (e.g. location, transportation, home delivery).

Topic 6.3: recommend improvements to a given marketing strategy

Give recommendations to support a given objective, e.g. increase market share, increase sales, increase customer base

Learning outcome 7: principles of ordering, pricing and controlling stock

Topic 7.1: buying and ordering processes

Understand buying and ordering processes, to include methods of payment, credit arrangements, methods of ordering, documentation, locating suppliers, stock delivery.

Topic 7.2 stock control and storage methods

Understand different methods of controlling stock, to include stock rotation, planning to meet demand, monitoring stock.

Understand the methods of storing products to include: perishable and non-perishable items, security, storage of plant health products, minimising wastage, compliance with relevant legislation and guidelines, e.g. DEFRA Code of Practice for Suitably Qualified Persons and Guidance for the Registration of Retail Premises 2008.

Topic 7.3 pricing methods

Know different pricing methods to include: cost based, competitor based and offers and discounts.

Unit 5 Supervision

What is this unit about?

The aim of this unit is to provide the learner with the knowledge, skills and behaviours to be an effective supervisor. Areas included will be principles of leading, how to lead and manage a team, develop working relationships with colleagues, manage team performance and how to manage own time.

Learning outcomes

	Learning Outcome	Topic
1	Understand leadership styles in organisations	1.1) Characteristics of effective leaders 1.2) Different leadership styles and how these can be used in different circumstances 1.3) Ways in which leaders can motivate their teams 1.4) The benefits of effective leadership for organisations
2	Understand team dynamics	2.1) The purpose of different types of teams and outline the benefits of effective team working 2.2) The stages of team development and behaviour 2.3) The concept of team role theory 2.4) How the principle of team role theory is used in team building and leadership 2.5) Typical sources of conflict within a team and how they could be managed
3	Understand the impact of change management within a team	3.1) Reasons for organisational change 3.2) Importance of accepting change positively 3.3) Potential impact on a team of negative responses to change 3.4) How to implement change within a team
4	Understand team motivation	4.1) The meaning of the term 'motivation' 4.2) Factors that affect the level of motivation of team members 4.3) Techniques that can be used to motivate team members 4.4) How motivated staff affects an organisation
5	Be able to engage and support team members	5.1) Organisational policies, procedures, values and expectations to team members 5.2) Communicate work objectives, priorities and plans in line with operational requirements 5.3) The benefits of encouraging suggestions for improvements to work practices

		5.4)	Importance of giving team members the opportunity to discuss work progress and any issues arising
		5.5)	Provide practical support to team members facing difficulties
		5.6)	Give recognition for achievements, in line with organisational policies
		5.7)	Treat colleagues with respect, fairness and courtesy
6	Be able to manage team performance	6.1)	Identify the strengths, competence and expertise of team members
		6.2)	Allocate responsibilities making best use of the expertise within the team
		6.3)	Agree with team member(s) specific, measurable objectives (SMART) in line with business needs
		6.4)	Provide individuals with resources to achieve the agreed objectives
		6.5)	Monitor individual's progress, providing support and constructive feedback to help them achieve their objectives
		6.6)	Techniques to monitor individuals' performance
		6.7)	Amend priorities and plans to take account of changing circumstances
		6.8)	Report on team performance in line with organisational requirements
7	Be able to deal with problems within a team	7.1)	Assess actual and potential problems and their consequences
		7.2)	Report problems beyond the limits of their own competence and authority to the right person
		7.3)	Take action within the limits of their own authority to resolve or reduce conflict
		7.4)	Adapt practices and processes as circumstances change
		7.5)	Take others' viewpoints into account when making decisions
8	Know how to manage time effectively	8.1)	Manage own resources
		8.2)	Use appropriate behaviours to manage own resources
		8.3)	Understand how to manage own resources
		8.4)	Know and understand how to manage own resources in their work place

Learning outcome 1: understand the leadership styles in organistions

Topic 1.1: characteristics of effective leaders

Effective leaders: adaptable, self-confident, reliable, ambitious, motivational, vision, has honesty & integrity, decisive, works well under pressure.

The difference between leadership and management.

Topic 1.2: different leadership styles and explain how these can be used in different circumstances

Lewin's leadership styles

Goleman's leadership styles

Topic 1.3: ways in which leaders can motivate their teams

Sharing vision & values, valuing people, giving feedback & recognition, offering minimal criticism, fostering creativity, stretching people's talents, managing aspirations.

Topic 1.4: the benefits of effective leadership for organisations

Effective leadership: achievement of objectives, motivation of staff, developing people's skills, shared vision and values

Benefits for organisation: meeting organisations' needs, enhanced reputation, retain customers, increase customer base, increase profits, improved business performance, motivated staff, retention of staff.

Learning outcome 2: understand team dynamics

Topic 2.1: the purpose of different types of teams and outline the benefits of effective team working

Know the purpose of different types of teams and the benefits of team working

- temporary – time-limited task groups to complete projects or specific short-term tasks or an excess of work for the permanent team
- permanent – long-term members of staff who complete business as usual tasks
- interdependent – team members contribute to an overall goal; team members support one another to complete the task and often have similar roles and skills so they are interchangeable
- cross-functional – team members are drawn from different areas of the organisation with different specialisms to solve problems or work on complex projects

Topic 2.2: the stages of team development and behaviour

Understand the Tuckman model

Topic 2.3: the concept of team role theory

Understand Belbin's team roles, contributions and allowable weaknesses of each role

Topic 2.4: how the principle of team role theory is used in team building and leadership

Understand team building:

- selection of team members
- selection of tasks to meet team members' contributions and allowable weaknesses
- raising self-awareness of individual team members
- building mutual respect
- developing strategies for effective team working for the future

Understand leadership:

- allocation of work
- selection of sub-groups

- awareness of contributions and allowable weaknesses
- create a balanced team
- address possible tensions or weaknesses in the team

Topic 2.5: typical sources of conflict within a team and how they could be managed

Know Bell & Harts 8 causes of conflict

Learning outcome 3: understand the impact of change management within a team

Topic 3.1: typical reasons for organisational change

Know typical reasons for organisational change. Takeover, merger, methods of working, location of work, job roles, reporting relationships, rebranding, technology, activities of competitors, improvements in technology, desire for growth, desire to improve processes, government regulations, survival

Topic 3.2: the importance of accepting change positively

Understanding new requirements, maintaining quality & quantity of work, identifying benefits of change

Importance of being positive: effective implementation of change, support team members, maintain optimistic outlook, maintain output of work, enhance opportunities for team members to develop new skills

Topic 3.3: the potential impact on a team of negative responses to change

Negative responses – resistance, reduced motivation, reduced productivity, loss of team members

Potential impact – failure to meet business needs, increased stress, reduced pay, reduced opportunities for development, reduced job security, loss of team members, reduced job satisfaction

Topic 3.4: how to implement change within a team

Overcoming resistance: communicate reasons, consult, support team members, share the vision, set positive example, link to individual goals, allow staff to participate in decisions, empowerment

Implementing change: forcefield analysis, brainstorming, re-training, participative planning, setting milestones and deadlines, giving rewards, involvement of staff in change process

Learning outcome 4: understand team motivation

Topic 4.1: the meaning of the term 'motivation'

Drive to behave in a certain way, decision to start an activity, effort to complete the activity, enthusiasm, willingness, pursuit of a goal, incentive to complete an activity

Topic 4.2: factors that affect the level of motivation of team members

Positively – reward (financial, praise, recognition, celebrating success), shared vision and values, feeling valued, feedback, fostering of creativity, stretching talents, aspirations encouraged

Negatively – criticism, not feeling supported, favouritism, excessive workload, pay and working conditions, lack of recognition

Topic 4.3: techniques that can be used to motivate team members

Herzberg's Motivation-Hygiene Theory and Maslow's Hierarchy of Needs are two important theories of motivation that describe how individuals can be motivated at work.

Topic 4.4: how having motivated staff affects an organisation

Motivated staff tend to perform better in the workplace and show more commitment to their job, and this has an impact upon, for example, team and organisational performance and staff retention rates.

Learning outcome 5: engage and support team members

Topic 5.1: organisational policies, procedures, values and expectations to team members

Policies and procedures can be defined thus:

'A set of policies are principles, rules, and guidelines formulated or adopted by an organisation to reach its long-term goals and typically published in a booklet or other form that is widely accessible.

Policies and procedures are designed to influence and determine all major decisions and actions, and all activities take place within the boundaries set by them. Procedures are the specific methods employed to express policies in action in day-to-day operations of the organization. Together, policies and procedures ensure that a point of view held by the governing body of an organization is translated into steps that result in an outcome compatible with that view.'

Ref: http://www.businessdictionary.com/definition/policies-and-procedures.html

Organisational values and expectations are the behaviours expected in an organisation and the manner in which employees are expected to carry out their work, and may be set out in a formal 'Code of Conduct'.

Topic 5.2: communicate work objectives, priorities and plans in line with operational requirements

Communication of work objectives, priorities and plans to the team is necessary and important in order to ensure team members know what they are doing and when the tasks will be completed, and can prioritise their resources and efforts accordingly.

Topic 5.3: the benefits of encouraging suggestions for improvements to work practices

Encouraging suggestions for improvements to work practices may improve staff morale and job satisfaction in the team; implementing good suggestions may lead to business benefits such as reduced costs and improved customer satisfaction.

Topic 5.4: the importance of giving team members the opportunity to discuss work progress and any issues arising

Understand discussing work progress and any issues arising with team members provides an opportunity to:

- acknowledge team achievements and celebrate success
- discuss strengths and identify areas for improvement
- clarify and agree any steps required to improve performance
- identify how systems, procedures, work methods might be improved

Topic 5.5: provide practical support to team members facing difficulties

Here 'practical support to team members facing difficulties' is taken to mean facing difficulties in the work role.

Providing support to colleagues might include:

- explaining policies, procedures, task requirements
- helping with their workload
- problem-solving
- obtaining additional resources
- providing encouragement
- providing constructive feedback that focuses on issues and solutions, not personalities or blame

Topic 5.6: give recognition for achievements, in line with organisational policies

Here 'recognition for achievements' is taken to mean recognition of team achievements *or* recognition of a team member's achievement.

Colleagues want to be appreciated and recognising their contribution to the achievement of team objectives lets them know that their efforts are noticed and valued.

Praise should be timely, direct, personal and specific, with colleagues being told exactly what they do well and why their contribution is appreciated.

There are numerous ways to recognise a colleague's contribution, and the praise must be given in a way that is meaningful to the colleague: some colleagues may prefer to be praised in public, for example, whilst others may be more comfortable with being praised in private, and some colleagues will find it more meaningful to have their contribution recognised by a higher-level manager.

Topic 5.7: treat colleagues with respect, fairness and courtesy

Colleagues will be better motivated to complete allocated tasks if they feel they are being listened to and that they are appreciated as part of a team.

Treating colleagues with respect, courtesy and fairness is fundamental in creating a positive climate within the team in order to influence team members to feel motivated.

Learning outcome 6: be able to manage team performance

Topic 6.1: strengths, competence and expertise of team members

Identify the strengths, competence and expertise of team members

Topic 6.2: allocate responsibilities making best use of the expertise within the team

When allocating responsibilities for the achievement of a task, it is necessary to make the best use of the expertise within the team so as to ensure that the task is completed as efficiently and as effectively as possible.

The knowledge and skills of team members is known as the 'skills mix', and by knowing the skills mix of a team and allocating responsibilities accordingly, team members will be able to focus on what they are best at as well as complementing each other's skills.

Topic 6.3: agree with team member(s) specific, measurable objectives (SMART) in line with business needs

Understand employee aims and objectives and how they are used and set.

Objectives provide focus and clear direction, and should be SMART:

- Specific: Clear, unambiguous, straightforward, understandable
- Measurable: Related to quantified or qualitative performance measures
- Achievable: With known resources
- Realistic: Linked to business needs
- Time-bound: Building-in completion date and review dates

Topic 6.4: provide individuals with resources to achieve the agreed objectives

Any task undertaken by a team should have a resource plan that identifies all the resources required to complete the task, i.e. labour, equipment and materials, and more complex tasks will require a schedule to be produced showing the quantity of each resource required, who requires it, and when it will be needed.

Topic 6.5: monitor individual's progress, providing support and constructive feedback to help them achieve their objectives

It is important and necessary to measure, or monitor, progress towards objectives with the line manager for a variety of reasons:

- it provides information to see if objectives are being achieved
- it enables any adjustments or improvements to the task to be carried out if they are required
- monitoring performance with the line manager will provide valuable information for a 'two-way' appraisal or performance review

The criteria used for measuring progress and achievement will depend upon the SMART objectives, and these criteria will need to be agreed with the line manager.

Individuals may need support to help them achieve their objectives, and possible sources of support, including feedback.

Topic 6.6: techniques to monitor individuals' performance

Understand techniques to monitor individuals' performance will depend upon the nature of the business, the role of the individual, and the complexity of the task being monitored, but will invariably involve some collection of data and the checking and comparing of records, such as output figures, materials usage, returns, customer feedback.

This may be formalised in some organisations in Key Performance Indicators (KPIs).

Topic 6.7: amend priorities and plans to take account of changing circumstances

Consider authority, influencing skills, policies, finances and team members

Topic 6.8: report on team performance in line with organisational requirements

Part of a team leader's role is to keep records and provide the management information required to maintain overall control of the business, and this will include reporting on team performance.

There will usually be requirements that the information is presented is, for example, valid, reliable, timely, fit-for-purpose, accessible, cost-effective and presented in an appropriate format that is understandable by the user.

Learning outcome 7: deal with problems within a team

Topic 7.1: assess actual and potential problems and their consequences

Actual and potential problems' is taken here to mean the resolution of problems relating to working relationships with colleagues.

To assess a problem is to examine all aspects of the problem in detail and make a judgement, based on the information available at the time, as to the consequences of that problem if it is not resolved.

Understand labour law and how this impacts on a supervisor. This should include:

- the rights of the employee
- supervisor's responsibilities
- the importance of being clear on expectations of employee
- setting time frames for improvement
- recording / reporting of performance problems
- Company disciplinary procedure

Topic 7.2: report problems beyond the limits of their own competence and authority to the right person

Report problems' is taken here to mean either problems relating to working relationships with colleagues or problems relating to the team task.

Limits, or level, of authority refers to the different hierarchical management levels in an organisation and the duties and responsibilities assigned to each of those levels, and 'competence' refers to proficiency that has been gained through education, training or experience.

In any workplace:

- a problem that lies outside the duties and responsibilities assigned to a role should be reported to a more senior manager whose responsibility that problem is
- individuals need to be aware of their own competence and be prepared to report a problem to the right person if they do not have the necessary knowledge or skills to deal with that problem

Topic 7.3: take action within the limits of their own authority to resolve or reduce conflict

Conflict may be defined as the internal or external discord that occurs as a result of differences in ideas, values or beliefs of two or more people.

Conflict management is important in order to:

- maintain morale
- maintain performance standards
- minimise absenteeism
- promote a safe working environment
- maintain group cohesion
- etc.

Depending upon the severity and level of conflict, conflict may be resolved or reduced informally, but in some cases it may be necessary to use the organisation's formal procedures. This should comply with labour law as outlined in section 7.1.

If the formal procedures are used, then each procedure should specify the level of authority appropriate to each stage.

Topic 7.4: adapt practices and processes as circumstances change

Although there may be clear plans and objectives in place for achieving a task, circumstances may change for a variety of reasons.

For example, the task or objectives may themselves need to be redefined for some reason, or perhaps monitoring of the task has identified that actual performance is different from planned performance.

In changing circumstances such as these there may be a need to adapt work practices and/or work processes in order to meet new requirements.

Topic 7.5: take others' viewpoints into account when making decisions

Empathy is the ability to identify and understand another's situation, feelings and viewpoints, and to 'put yourself in the other person's shoes'.

Successful leaders and managers work hard to understand others' viewpoints in a particular situation. They acknowledge others' viewpoints when making decisions and consider the impact of their choices on the wellbeing and interests of others.

Learning outcome 8: manage own resources

Topic 8.1: manage own resources

Identify and agree the requirements of their work role with those that they report to

Discuss and agree personal work objectives with those they report to and how they will measure progress

Identify any gaps between the requirements of their work role and their current knowledge, understanding and skills

Discuss and agree with those they report to, a development plan to address any identified gaps in their current knowledge, understanding and skills

Undertake the activities identified in their development plan and discuss, with those they report to, how they have contributed to their performance

Get regular and useful feedback on their performance from those who are in a good position to judge it and provide you with objective and valid feedback

Discuss and agree, with those they report to, any changes to their personal work objectives and development plan in the light of performance, feedback received

Check, on a regular basis, how they are using their time at work and identify possible improvements

Ensure that their performance consistently meets or goes beyond agreed requirements.

Topic 8.2: **use appropriate behaviours to manage own resource**

Recognise changes in circumstances promptly and adjust plans and activities accordingly

Prioritise objectives and plan work to make best use of time and resources

Take personal responsibility for making things happen

Take pride in delivering high quality work

Agree achievable objectives for themselves and give a consistent and reliable performance

Find practical ways to overcome barriers

Make best use of available resources and proactively seek new sources of support when necessary

Topic 8.3: understand how to manage own resources

Know:

- why managing their resources (particularly knowledge, understanding, skills and time) is important
- how to identify the requirements of a work-role
- how to set work objectives which are SMART (Specific, Measurable, Achievable, Realistic and Time-bound)
- how to measure progress against work objectives
- how to identify development needs to address any identified gaps between the requirements of their work-role and their current knowledge, understanding and skills
- what an effective development plan should contain
- the type of development activities which can be undertaken to address identified gaps in knowledge, understanding and skills
- how to identify whether/how development activities have contributed to their performance
- how to get and make effective use of feedback on their performance
- how to update work objectives and development plans in the light of performance, feedback received, any development activities undertaken and any wider changes
- how to record the use of their time and identify possible improvements

Topic 8.4: know and understand how to manage own resources in their work place

Know agreed requirements of their work-role including the limits of their responsibilities

Know agreed personal work objectives

Know the reporting lines in their organization

Know and understand their current knowledge, understanding and skills

Identify gaps in their current knowledge, understanding and skills

Know and understand their personal development plan

Know their organisation's policy and procedures in terms of personal development

Know the available development opportunities and resources in their organisation

Understand possible sources of feedback in their organisation

Unit 6 Health & Safety Supervisor

What is this unit about?

The principles, and importance, of health and safety and its implementation, within horticulture & landscape. The application of health and safety legislation and its implementation in the work setting, by a person in the supervisory position. This unit covers health and safety legalisation which provides the requirements upon which policies and procedures within the industry are based. The understanding of the role of a supervisor in setting safe working practices and encouraging a safety culture amongst the work team.

Working in horticulture & landscape supervisory roles is exciting and varied but operating in these environments can be dangerous and present potential risks and hazards. As part of this unit learners will look at the legislation that is in place to maintain safety, the requirements for risk and Coshh assessment and how these impact on working practices.

Learning outcomes

	Leaning Outcome	Topic
1	Understand the impact legislation has on horticulture	1.1) Legislation relevant to land-based industries 1.1) Employer and employee responsibilities 1.1) Policies and Procedures
2	Understand risk assessment requirements	2.1) Risk assessment terminology 2.2) Hazards, risks and control measures 2.3) Carryout a point of work risk assessment and record the findings, informing the work team
3	Understand safe working practices	3.1) Manual handling principles 3.2) Basic first aid procedures 3.3) Fire safety principles 3.4) Code of Practices 3.5) Guidance notes 3.6) Electricity at work regulations, underground and overhead services 3.7) COSHH regulations 3.8) Biohazards in the work place
4	Implement safe working practices	4.1) Create a simple risk assessment 4.2) Identify hazards to the environment 4.3) Show the locations of key safety documents 4.4) Demonstrate adherence to safety protocol 4.5) establishing a safety culture by the supervisor setting standards and examples to the work team

Learning outcome 1: understand the impact legislation has on horticulture

Topic 1.1: legislation relevant to land-based industries

The main legislation related to the land-based sector, and where it applies. Providers should teach to the latest legislation.

Legislation:

- Health and Safety at Work Act (1974) (HASAW)
- Provision and Use of Work Equipment Regulations (1998) (PUWER)
- Reporting of Injuries Diseases and Dangerous Occurrences Regulations (2013) (RIDDOR)
- Control of Substances Hazardous to Health Regulations (2002) (COSHH)
- Control of Vibration at Work Regulations (2005)
- Control of Noise at Work Regulations (2005)
- Management of Health and Safety at Work Regulations (1999)
- Personal Protective Equipment Regulations (1992) (PPE)
- Regulatory Reform (Fire Safety) Order (2005)
- Environmental Protection Act (1990)
- Wildlife and Countryside Act (1981)
- Electricity at Work Regulations (1989)
- Working at Height Regulations (2005)
- Lifting Operations and Lifting Equipment Regulations (1995) LOLER

Please note, health and safety relating to specific tasks or processes will be covered in the relevant unit

Topic 1.2: employer and employee responsibilities

The basics of safety law noting the following;

Employer responsibilities under health and safety regulations:

- decide what could harm employees in their job and take precautions to stop it.
- provide healthy work environment – washing facilities, toilets, ventilation, heating and lighting, no smoking policy, first aid
- providing safe work environment - signage, PPE, fire safety, risk assessments, safe equipment
- develop and maintain a positive safety culture
- training
- insurance
- reporting certain accidents
- ensure employees are made aware of hazards from the task, site and environment

Employee responsibilities under health and safety legislation:

- responsibility for own personal health and safety
- to take reasonable care not to put the safety of other people at risk
- co-operation with employer
- not interfering with or misusing equipment/provisions (e.g. alarms, guarding, signage) provided for health safety and welfare
- supervisor to undertake a full 3 day first aid at work qualification
- support a positive safety culture

- lines of reporting for:
  - accidents
  - faults

- damage
- following instructions and safe working practice – e.g. using PPE where provided
- helping others and sharing good practice

Topic 1.3: policies and procedures

How employers meet legal requirements via;

- Health & Safety Policy
- Safety Management Systems (plan, do, check, act)
- Safety signs and safe systems of work
- Relevant Training on hazards at work, measures to avoid these hazards and emergency procedures
- Evaluating Competence (ability, knowledge & experience)
- Formal Training / Accreditation Programmes (LISS, CSCS, NPORS)
- Safety Plans (CDM)
- Personal hygiene requirements
- Bio-hazards, leptospirosis, lymes, Brown tailed moth, OPM, Giant Hogweed risks to human health
- Exposure to extremes of weather and temperature
- Supervisor ensure that the work team is aware of health risks for extremes of weather and how to protect them selves
- Know responsibilities for reporting to senior management e.g. RIDDOR

Learning outcome 2: understand risk assessment requirements

Topic 2.1: supervisor to understand risk assessment requirements

Understand basic terminology, including:

- generic risk assessment
- site specific / point of work risk assessment
- task specific risk assessment
- point of work risk assessment
- environmental risk assessment
- emergency action plan
- method statement
- hazard
- risk
- control measures
- persons at risk e.g. yourself, colleagues, general public

Topic 2.2: hazards, risks and control measures

The supervisor to implement the five step process when carrying out a risk assessment:

- identifying hazards
- deciding who might be harmed and how
- evaluating risks, deciding on control measures
- recording finding and implementing
- reviewing as required
- supervisor to make the work team aware of the risk assessment and control measures
- supervisor to ensure the control measures are being adhered to.

Learning outcome 3: understand safe working practices when working in land-based industries

Topic 3.1: manual handling principles

The principles of and techniques for manual handling, and consequences of not following:

- legislative requirement
- safe lifting techniques
- use of mechanical aids
- potential implications of poor manual handling
- manual handling risk assessments

Topic 3.2: basic first aid procedures

How to plan for first aid situations, including;

- identifying and nominating trained staff
- procedures to be taken
- how and when to call for assistance
- reporting requirements
- own limitations when responding to first aid emergency

First aid procedures will be supported by the core qualification 'Emergency First Aid', which will be required prior to taking the end point assessment.

Topic 3.3: fire safety principles

The principles of fire safety, procedures to follow, and fire safety equipment and their uses:

- procedures for raising the alarm
- evacuations and drills
- types and uses of fire safety equipment:
    - smoke detectors
    - fire alarms
    - fire extinguishers – water, dry powder, foam, CO2
    - fire blankets
    - fire hoses
- own limitations when responding to potential fire emergency

Learning outcome 4: implement safe working practices

Topic 4.1: create a risk assessment

Supervisor to undertake a generic risk assessment and a task specific point of work risk assessment using companies templates

Create a risk assessment for a task and site;

- identify and record the main hazards associated with that task
- identify and record what the risks are from each if these hazards
- allocate the likelihood of harm occurring from these risks using a high/med/low scoring system
- identify and record any control measures that can be used to lower the risk score
- supervisor to brief work team of implementing the risk assessment and method statement
- ensure work team is following the risk assessment and method statement

Topic 4.2: identify hazards to the environment

Supervisor identify and document environmental hazards for a task and site:

- risks to the environment present as a result of works that will be taking place
- the environmental impact for each risk should an incident occur
- control measures that can be put in place to mitigate risks

Topic 4.3: detail the locations of key safety documents on site

Know the locations of the following whilst on site:

- site specific risk assessments
- generic risk assessment for routine tasks
- emergency plan
- safety law poster
- safety policy statement

Topic 4.4: demonstrate adherence to safety protocols

For a task specific and a site specific risk assessment for works; understand the control measures that are identified in the risk assessments, and how these are implemented on site.

Unit 7 Environment Protection

What is this unit about?

The purpose of this unit is for the supervisor to understand their role within Environment Protection Act, including pollution, and Waste management. To develop a site waste and prevention of pollution from horticultural operations, keep work team informed of protected species and invasive species presence and their role in preventing the spread of these species. Protected species and invasive species identification.

Learning outcomes

	Leaning Outcome	Topic
1	Environment Protection	1.1) Sources of pollution 1.2) Prevention 1.3) Site waste plans 1.4) Waste control supervisor's role in implementing the waste hierarchy 1.5) Supervisor's role in identification and disposal of hazardous waste
2	Protected species	2.1) Identification of protected species 2.2) Horticultural effects on protected species 2.3) Legislation and protected species designation Wildlife and Countryside Act, SSSI, Nature reserves, and Tree Preservation Orders 2.4) Actions required when protected species are identified 2.5) Horticultural operation which could affect protected species
3	Invasive species	3.1) Recognition and damage to the environment by invasive species 3.2) Horticultural operations which could cause further spread of invasive species 3.3) Actions required if invasive species are identified

Learning outcome 1: environmental protection

Topic 1.1: sources of pollution in horticulture

Identify sources of pollution i.e. fuel, oils, pesticide, rotting vegetation, and fertilizers entering ground water, streams and ponds.

Know how horticultural operation can cause pollution and damage to the environment, such as re-fuelling of machinery, leaking fuel tanks, oil tanks and spilt pesticide.

Topic 1.2: pollution prevention

Store fuels, oils and pesticides in secure bunded store which prevents leaks.

Use of a spill kit when required on horticultural sites.

Storage of bio degradable waste to prevent leaking in to the environment.

Topic 1.3: waste control

Implement waste controls and the waste hierarchy:

- prevention of waste
- reuse of waste
- recycling of waste
- safe and legal disposal of waste.

Topic 1.4: waste control supervisor's role in implementing the waste hierarchy

Understand waste control supervisor's role in waste hierarchy:

- development of site waste plans
- supervisor to ensure its implementation.
- supervisor to ensure waste transfer notes are recorded and stored

Topic 1.5: supervisor's role in identification and disposal of hazardous waste

Supervisor to identify hazardous waste and its safe and legal disposal

- identify hazardous waste and its source
- inform work team of its presence and isolate area of contamination
- inform waste disposal company of contamination and use the correct waste transfer notes and of its safe disposal

Learning outcome 2: Protective species

Topic2.1 identification of protected species

The supervisor to identify any protected species present and carryout a Environmental Risk Assessment prior to works commencing

Topic 2.2: horticultural effects on protected species

Identify protected species which will affect horticultural operations, and take actions required to ensure the species are not disturbed. Supervisor to inform the work team of the protected species and its location

Topic 2.3: legislation and protected species designation

Understand the effects of the protected species legislation and how this affects horticultural operations including working with an environmental risk assessment. Supervisor to identify where horticultural operations could affect protective species and inform the work team

Topic 2.4: actions required when protected species are identified

Take actions to ensure the protected species and not disturbed by horticultural operations, The supervisor to set up exclusion zones, and reporting to managers, or client

Topic 2.5: horticultural operation which could affect protected species

Know which operations could affect protected species including grass cutting, tree, shrub and hedge pruning, working near water, and vegetation control operations.

Learning outcome 3: invasive Species

Topic 3.1: recognition and damage to the environment by invasive species

Identify invasive species during horticultural operations and the supervisor to understand the legislation affecting invasive species and inform the work team

Understand responsibilities in reporting and isolating these species.

Understand potential damage to the landscape environment and loss of biodiversity and human health risks.

Topic 3.2: horticultural operations which could cause further spread of invasive species

The supervisor to identify horticultural operation which could cause further spread of invasive species, such as soil cultivation, vegetation control, strimming and mowing. Ensure the planned works do not spread or affect invasive species and the supervisor to monitoring the effectiveness of the control measures

Identify and prevent contact with species which cause human health risks.

Topic 3.3: actions required if invasive species are identified

Prevent further spread of invasive species such as isolating the area and briefing work team of its presence.

The supervisor to set up biosecurity measures to prevent the spread of invasive species on site and inspect all imported material brought onto site.

Prevent contact with species which causes human health risks, by wearing appropriate PPE.

Unit 8 Plant Growth and Development

What is this unit about?

The purpose of this unit is to give learners an understanding of the scientific principles of plant growth and development. The scientific knowledge will then be applied to the practical maintenance of living plants and used to inform the development of management processes and to identify and solve problems.

Learning outcomes

	Learning Outcomes	Topic
1	Physical properties and processes involved in plant growth	1.1) Plant tissues and their function 1.2) Germination 1.3) Photosynthesis 1.4) Respiration and Transpiration
2	Naturally occurring factors which affect plant growth	2.1) Microclimates 2.2) Light 2.3) Water 2.4) Nutrients
3	Factors which affect plant growth in cultivation	3.1) Designed microclimates 3.2) Pruning and training 3.3) Irrigation and nutrition 3.4) Atmosphere enhancement
4	Identifying and solving problems	4.1) Processes for identifying cultivation problems 4.2) Identifying solutions for cultivation problems

Learning outcome 1: physical properties and processes involved in plant growth

Topic 1.1: plant tissues and their function

Know the structure and function of plant cells, tissues and vegetative organs, including:

- cell components and tissues
- plant tissue structure and function in leaves, stems and roots
- structure and function of flowers and fruit

Topic 1.2: germination

Know the requirements of seeds for germination, including moisture, temperature, oxygen, light and dark. Understand the following factors with relation to the germination of seed:

- viability
- seed structure
- dormancy and methods of breaking dormancy

Topic 1.3: photosynthesis

Understand the process of photosynthesis and the factors that affect it, including carbon dioxide, water, sugars and oxygen, and the need for chlorophyll and light.

Know the environmental factors which affect the rate of photosynthesis including temperature, light intensity, carbon dioxide, water and nutrients.

Topic 1.4: respiration and transpiration

Understand the processes of aerobic and anaerobic respiration and their significance in horticultural environments, including waterlogging, produce and seed storage. Know the factors which affect the rate of respiration including oxygen and temperature, and understand how they affect it.

Understand the process of transpiration, its link to osmosis and diffusion, and the movement of water and minerals through the plant. Identify factors which could affect the rate of transpiration including temperature and air movement.

Learning outcome 2: naturally occurring factors which affect plant growth

Topic 2.1: microclimates

Understand how microclimates function and how they affect plant growth. Know how the following will contribute to the microclimate of a site:

- topography
- drainage
- aspect
- exposure
- heat sinks
- frost pockets
- shade

Know how to work with microclimates in a horticultural setting, to identify, modify and cultivate within their capabilities.

Topic 2.2: light

Understand how light levels affect plant growth, and the different populations of plants which thrive in differing light levels. Understand how this occurs in nature.

Topic 2.3: water

Understand how water presence or absence affects plant growth, and the different populations of plants which thrive in differing levels. Understand how this occurs in nature.

Topic 2.4: nutrients

Understand how nutrients become available to plants in nature.

Learning outcome 3: Factors which affect plant growth in cultivation

Topic 3.1: designed microclimates

Know how to modify microclimates for the successful cultivation of plants, including,

- provision of light or shade
- windbreaks
- artificial topography

Topic 3.2: pruning and training

Know how the pruning of plants is employed in cultivation and for what purpose. Know how the process of pruning at different times of year affects plant growth. To include:

Method:

- tools and equipment
- times of year
- successful pruning cuts

Purpose:

- formative pruning
- trained forms
- pruning for flowers and fruit
- coppicing, stooling and pollarding
- tipping out

Topic 3.3: irrigation and nutrition

Understand how irrigation and nutrition can be employed in the successful cultivation of plants. Understand the factors affecting water and nutrient requirements in plants and how to manage their application accordingly.

Know the nutrient requirements for plants and know the symptoms of common nutrient deficiencies. Understand how to apply fertiliser in different forms including liquid, granular and foliar feeding.

Topic 3.5: atmosphere enhancement

Understand how atmosphere enhancement can be employed in the cultivation of glasshouse crops. Understand the links to plant physiological processes including photosynthesis and thickening. Factors to be understood include:

- light and wavelengths
- water and nutrients
- CO_2 enrichment

Learning outcome 4: identifying and solving problems

Topic 4.1: processes for identifying cultivation problems

Understand the factors to assess in identifying common plant problems. Know the processes to engage in to diagnose issues. Including:

- site and soil analysis
- pest and disease monitoring and recording
- purchase of poor stock
- weed populations
- nutrient deficiencies
- waterlogging
- drought
- planting depth
- undeveloped roots
- extreme temperatures
- wind damage

Topic 4.2: identifying solutions for cultivation problems

Know how to remedy the above issues, including modifying the environment, soil conditions, drainage and irrigation. Know when to intervene in plant growth and when to replace with a new plant.

Unit 9 Supervise Use of Tools, Equipment and Machinery

The learner should have undertaken units 5 and 6 from the Horticulture / Landscape Operative training specification covering use of non-powered, hand held powered and pedestrian controlled powered equipment.

This unit covers operation of tools equipment and machinery, and supervision of others to do so. Machinery should include hand held powered and non-powered, pedestrian controlled and ride on.

Learning outcomes

	Learning Outcome	Topic
1	Understand use of tools, equipment and machinery	1.1) Legislation and industry best practice guidance for tools, equipment and machinery use 1.2) Understand principles and limitations of machinery operation
2	Operate machinery	2.1) Operate machinery
3	Supervise use of tools, equipment and machinery	3.1) Selection of tools, equipment and machinery 3.2) Use of tools, equipment and machinery 3.3) Storage of tools equipment and machinery

Learning outcome 1: Understand use of tools, equipment and machinery

Topic 1.1: legislation and industry best practice guidance for tools, equipment and machinery use

Understand

- the significance of current legislation and industry best practice guidance to the machinery they operate.
- the construction and working principles of a selection of machines commonly used in their specific land based industry
- the significance of current legislation and industry best practice guidance to the machinery they operate. To include: PUWER 1998, HASAWA 1974, COSHH 2002, HAVS 2005, LOLER 1998, PPE 1992, Noise at work act 2005, Manual handing regulations act 1992..

Topic 1.2: Understand principles and limitations of machinery operation

Understand the importance of:

- preparing machines for work
- manufacturers' recommendations, user's manuals and machinery handbooks

Understand the purpose, operating and working principles and limitations of machinery. For example:

- purpose built, trailed, tractor mounted, self-propelled or pedestrian,

- power source (e.g. electric, battery, spark ignition, compression ignition, PTO and hydraulic)
- drive and transmission systems
- cutting mechanisms
- cutting/loading capacity or range
- input and output ranges and levels
- terrain suitability
- safety features.

Learning outcome 2: Operate machinery

Topic 2.1: operate machinery

Prepare machines relevant to job, for work in accordance with the manufacturers' recommendations, user's manual or machinery handbook.

Carry out pre-use checks for machinery in accordance with the manufacturers' recommendations, user's manual or machinery handbook.
Identify common faults and suggest appropriate remedial action to the machinery available to them. Common faults may include:

- incorrect, polluted or lack of fuel
- blocked filters (air, fuel, oils)
- poor oil pressure
- damaged sprockets and fouled drive systems
- damaged or blunt blades
- fouled or incorrectly set gap of spark plugs
- starter recoil tension
- blocked mechanisms.

Carry out risk assessments for the machines accordance with The Management of Health and Safety at Work Regulations 1999.

Know how to minimise possible environmental impacts of land based industry machinery, eg:

- oil and fuel spillage and storage
- emissions
- soil stability and erosion
- protected species
- waste disposal
- watercourses

Safe and efficient operation of specialist machinery, to include as appropriate:

- risk assessment
- adherence to industry safety guidance and operator's manual,
- safe start and stop,
- monitoring of machine performance and output
- effective communications
- clearance of blockages,
- conversion between work and transport positions
- economic operation
- safe and efficient operation.

Carry out post operating procedures appropriate to machinery operated, to include:

- cleaning

- inspecting for and reporting of damage or defects
- lubrication
- storage.

Learning Outcome 3: Supervise use of tools, equipment and machinery

Topic 1: selection of tools, equipment and machinery

Understand the factors when selecting machinery for task. To include:

- site access
- site features
- transport
- task
- safety and comfort of operators
- productivity
- team size and competence
- availability of Personal Protective Equipment
- legislation such as Puwer

Select appropriate tools for the job and worksite

Sourcing tools, equipment and machinery

- follow company policy / procedure for equipment tools and machinery sourcing
- know requirements for purchase, hire or lease of equipment
- keep records associated with sourcing machinery

Topic 2: supervise use of tools, equipment and machinery

Supervise:

- picking selected tools, machinery and equipment following company procedures including checking maintenance records
- safe transport of tools equipment and machinery to worksite
- use of tools equipment and machinery on site including items covered in learning outcome 2.
- solving problems relating to tools, equipment and machinery
- health and safety of operators on site to include
    - risk assessment
    - assess operator competence to use tools, equipment and machinery
    - instruction on preparation and use of tools, equipment and machinery
    - operator productivity and comfort
    - health and safety hazards to include vibration and noise
    - proper use of correct Personal Protective Equipment
- record keeping associated with use of tools, equipment and machinery including maintenance records

Topic 3: Storage of tools equipment and machinery

Know the importance of post operating procedures and correct storage of tools equipment and machinery

Supervise post operating procedures for tools equipment and machinery, to include:

- cleaning
- inspecting for and reporting of damage or defects
- lubrication

- storage appropriate for equipment and secure
- record keeping

Unit 10 Vegetation control

What is this unit about?

The purpose of this unit is for the supervisor to understand the need for vegetation control, and the detrimental effects of not controlling plants. This unit covers control of unwanted vegetation, not formative pruning, which can be found under plant growth. This unit covers control vegetation using hand tools, machinery, and chemical control methods. This unit covers the knowledge and skills for the supervisor to choose the correct method to carryout vegetation control for the work team.

The supervisor to direct the work team to use the most appropriate method of vegetation control and use the correct tools and machinery. The supervisor to identify the vegetation required to be controlled and species that are not required to be controlled.

Learning outcomes

	Leaning Outcome	Topic	
1	Know the different types of plant growth and sites that need to be controlled	1.1) 1.2) 1.3) 1.4)	Types of vegetation, its identification, modes of colonisation and spread and the reasons for its removal The need for vegetation control, including legal reasons for control Site requirements to control vegetation Directing the work team to use the correct and safe methods of control
	Know the methods and equipment used to control plant development	2.1) 2.2) 2.3)	The supervisor to have an understanding of the methods and equipment used to control vegetation and to be able to choose the most appropriate method. Direct the work team to choose most appropriate, herbicide to be used to control vegetation, as part of a structured control plan and the method of application Supervise vegetation control as part of a vegetation control plan
3	The supervisor to be able to direct the work team to remove unwanted plant growth and un wanted plants	3.1) 3.2) 3.3) 3.4)	Selection and use of equipment Site preparation Control vegetation The supervisor to ensure that all arisings are correctly disposed of

Learning outcome 1: know the different types of vegetation that needs to be controlled

Topic 1.1: understand the types of vegetation and the reasons for its removal including legal requirements

Types of vegetation that need to be controlled:

- damaged plants
- diseased materials
- weeds
- plant debris

- non typical
- dead
- invasive non-native and native species

Growth that requires control:

- excessive growth
- badly positioned
- interfering with footpaths
- utilities infrastructure
- health and safety
- sight lines
- fire hazard
- obstructing drainage infrastructure

Sites or ornamental areas on which vegetation needs to be controlled:

- green field
- reclaimed
- urban derelict
- existing gardens or ornamental areas
- transport infrastructure
- energy networks infrastructure
- telecoms infrastructure
- development sites

Learning outcome 2: know the methods and equipment used to control vegetation

Topic 2.1: supervisor to have an understanding of the methods and equipment used to control vegetation and to be able to choose the most appropriate method.

Methods used to remove unwanted vegetation and when they are used

- trimming
- mechanical methods
- hand held tools
- hand held powered equipment
- self-powered
- growth regulators
- herbicide usage
- pruning

Topic 2.2: Direct the work team to choose the most appropriate herbicide to be used to control vegetation, as part of a structured vegetation control plan, and the method of application

Chemicals used to control vegetation, when they are used, and the consequences of using the chemicals incorrectly:

- pesticide
- herbicide
- biocide
- translocated
- systemic
- contact
- residual

- selective
- pre emergence / post emergence
- spray
- stem injection
- eco plug stump treatment
- granular

Topic 2.3: Supervise vegetation control as part of a vegetation control plan

The supervisor to select and direct the work team to use the most appropriate and effective methods to control vegetation as part of a vegetation control plan.

Learning outcome 3: prepare site and control vegetation

Topic 3.1: Select the most appropriate equipment to use in the control of the vegetation and direct the work team in their use

Select equipment to use in control of vegetation:

- hand tools shears, secateurs, pruning saws, and loppers
- hand held hedge trimmer, strimmer, brush cutter, and mowers
- self-powered mowers and types of cutter heads.
- heat sources (flame, steam, foam)

Topic 3.2: Supervise preparation of the site ready to control vegetation

Prepare the site:

- site checks for hazards i.e. wire, cables, glass and discarded needles
- environment checks for nesting birds and roosting bats
- hazards from overhead services, underground services and surface positioned structures or services
- check for injurious species of plants and insects.
- exclusion of animals, livestock and humans

Topic 3.3: Control vegetation

Control vegetation on the site following standard safety procedures and working in a way that minimises the impact on the environment

Topic 3.4: Disposal of arisings Removal and disposal of arisings.

- the supervisor to ensure the collection and correct disposal of the arisings, to ensure there is no spread of the problem by incorrect disposal of the arising

Unit 11 Plant identification and classification for Supervisors'

What is this unit about?

The purpose of this unit is for learners to know how to identify plants using scientific and common names. They must understand and demonstrate correct interpretation of legal codes that govern name use and use names correctly. Learners need to have a working knowledge of the plant family system and understanding of the meaning of commonly used species epithets. A good plant knowledge underpins many tasks that a site supervisor will be expected to lead on i.e. vegetation control, checking plant inventories/purchases, identifying susceptible hosts for pest & diseases control, identification of protected species, writing reports. They will also be looked upon as a plant naming resource from subordinate team members and clients, and will be expected to converse using scientific names to other horticultural professionals.

Learning outcomes

	Leaning Outcome	Topic
1	Knowledge and demonstration of correct interpretation of the codes controlling plant name use.	1.1) Scientific names how to write them and scientific authorities. 1.1) Common names and cultivars. 1.1) Legal identity, registered names and selling names.
2	Knowledge of modern plant family systems and their use in plant identification.	2.1) Reasons for the adoption of plant phylogeny in family systems. 2.2) Overview of how plants are named.
3	Knowledge of commonly used specific epithets	3.1) Use of plant epithets to aid identification.
4	Use of plant identification tools	4.1) Use of the information sources 4.2) Use of plant keys 4.3) Botanical literature 4.4) Recording plant information
5	Identify plants using scientific and common names	5.1) Identify plants using scientific names

Learning outcome 1: knowledge and demonstration of correct interpretation of the codes controlling plant name use

Topic 1.1: scientific names how to write them and scientific authorities.

Be familiar with the two codes governing correct use of plant names International Code of Nomenclature for Algae, Fungi and Plants (Melbourne Code) and International Code of Nomenclature for Cultivated Plants (Toronto 2002).

- correct format of genus/ species (italics genus with a capital letter species and subspecies all lower case)
- taxonomic abbreviation format (lower case roman text)
- scientific authority purpose and not confuse as a name
- subspecies, variety (lower case)
- cultivar (single quotes, each word starting with a capital letter)
- hybrid (parentage, hybrid group name, intra specific and bi-generic hybrids)

Topic 1.2: common names and cultivars

Know common names must be written in roman text without capitals unless containing a proper noun. They are not enclosed in single quotes.

Cultivars or more correctly cultivated varieties are given to cultivated plants to distinguish varietal difference they can be codes or words always have words stating with capital letters, in single quotes and in roman text.

Topic 1.3: legal identity, registered names and selling names.

Know that cultivated plants can be protected by plant breeders' rights or plant patent and that the first registered cultivar name is the legal identity of the cultivar. Breeders' may protect their intellectual property with a trade mark name, these are indicated with TM in superscript usually a different typeface and are not in single quotes as for cultivars. Selling names are written as per trade mark names but don't have any protection. Often they change frequently according to market conditions or will be under different names according to country.

Learning outcome 2: knowledge of modern plant family systems and their use in plant classification.

Topic 2.1: Reasons for the adoption of plant phylogeny in family systems.

Understand the scientific bases for family classification systems using DNA fingerprinting to establish a phylogeny leading to the construction of the plant family tree and international plant name project to standardise plant naming

Understand why plants change their name and are reclassified and the need to recognise the accepted name.

Learning outcome 3: knowledge of commonly used specific epithets

Topic 3.1: use of plant epithets to aid identification

Understand the relevance of specific epithet names to plant characteristics and how there are exceptions that are misleading.

Learning outcome 4: use of plant identification tools

Topic 4.1: use of the information sources

Identify reliable information sources, peer reviewed or sourced from a reliable identifiable plant knowledge organisation with a credible reputation.

Topic 4.2 Use of plant keys

Use dichotomous plant identification keys and plant identification and flora keys to name unidentified plants.

Topic 4.3 Botanical literature

Be aware of Floras, Monographs, Field guides and published articles peer reviewed or in specialist press. How to access and interpret to provide useful informed comment on plant information for supervisory tasks.

Topic 4.4 Recording plant information

Understand basic plant glossary terms used to commonly describe plants or know how to check meaning. When faced with an unidentified species, record information for later identification by text, photographic images and preserved plant material for example noting:

- habit (e.g. prostrate, horizontal, fastigiated, columnar, weeping, round, irregular)
- size
- leaf (shape, apex, margins, attachment, arrangement, surface, colour)
- bud (shape, size, arrangement, colour)
- stem (colour, texture, internodes, internal structure)
- stem and leaf modifications
- flower and fruit (colour, shape, size, arrangement, number of parts, scent, type of fruit?)

Learning outcome 5: identify plants using scientific and common names

Topic 5.1: identify plants using scientific names

Identify a minimum of three hundred (300) plants. Candidates should be trained to have an awareness of all following categories, but will be tested on 5.

Use the scientific name and for weeds and British natives common names as well.

Specimens should have reasonable availability of characters to allow identification but consideration should be made for industry requirements to identify dormant planting stock and types of grass seed where this knowledge is useful in practical supervisory duties.

Identify plants from 5 categories

- annuals and tender perennials
- hardy herbaceous perennials (including aquatics and marginal)
- alpine and rock garden plants
- ornamental and turf grasses
- shrubs and climbers
- trees, deciduous and evergreen.
- weeds and invasive alien plants
- British natives
- indoor plants
- fruit and vegetables

Unit 12 Soils & Growing Media for Supervisors'

What is this unit about?

The purpose of this unit is to provide the learners with the knowledge and skills required to appraise soil or growing media for cultivation suitability; this includes being able to take samples for testing and to be able to act on soil test results. Supervisors need to acquire or already possess soil cultivation techniques and relate these to soil science for the improvement of plant growth

Learning outcomes

	Leaning Outcome	Topic
1	Know a range of soils, how they were formed and their characteristics affecting plant growth	1.1) Soil types and soil formation 1.2) Investigate characteristics of soils and record them 1.3) Understand how soils affect plant growth 1.4) Sampling techniques
2	Supervise soil cultivation practices	2.1) Soil cultivation 2.2) Soil amelioration 2.3) Soil protection 2.4) Soil fertiliser application
3	Know a range of growing media	3.1) Soil based i.e. JI mixes 3.2) Peat based mixes 3.3) Peat free mixes 3.4) Growing media ingredients 3.5) Controlled release fertilisers and pesticides 3.6) Specialist growing media
4	Understand principles of growing media management	4.1) Air filled porosity 4.2) Requirement for even water percolation through the media 4.3) Stability of structure. 4.4) Soil fungi hydrophobic effects

Learning outcome 1: know a range of soils, how they were formed and their characteristics affecting plant growth

Topic 1.1: soil types and soil formation

Recognise loams, clays, silts, sands, organic soils and understand how they are formed and the differences in igneous, sedimentary and metamorphic rocks in their composition.

Topic 1.2: investigate characteristics of soils and record them

Dig a profile pit; identify different soil horizons and carry out standard soil texture classification to identify soil type. Record soil structure condition and determine presence of soil pans and general drainage characteristics for the site.

Topic 1.3: understand how soils affect plant growth

Understand

- rooting depth and anchorage
- pH
- nutrient availability and cation exchange
- drainage and water holding capacity
- organic matter and living organisms in the soil
- colour and heat retention
- ease of cultivation
- environmental pollution
- topography
- previous land use

Topic 1.4: sampling techniques

Take soil samples for testing, using a soil auger or surface sampling. Obtaining an average sample by sampling across the site in a W shape. Importance of correct labelling and indication of what you want from the laboratory

Learning outcome 2: supervise soil cultivation practices

Topic 2.1: soil cultivation

Programme soil cultivation.

Know the equipment available and resources required.

Instruct staff to produce the required finish.

Topic 2.2: soil amelioration

Manage soil improvement / amelioration i.e. liming, incorporation of bulky organic manures, green manures, drainage systems, hydrogels, mycorrhizae, textural amendment use of weathering on cultivation.

Topic 2.3: soil protection

Know how to protect soil from erosion, capping, cultivation pans, surface and subsurface compaction. Understand the benefit of green manure, cover / nurse crops, geotextiles, and organic mulches.

Topic 2.4: soil fertiliser application

Know fertiliser recommendations as units per Ha, a unit being a kg of the required element.

Understand the available amount of nutrients in a fertiliser product from the label analysis as a percentage.

Know the dangers of providing too much or too little nutrition. Environmental pollution of water and detrimental effect on soil fungi.

Know the types of fertiliser formulation available for example straight, compound, controlled release, slow release, organic, inorganic

Learning outcome 3: know a range of growing media

Topic 3.1: soil/loam based e.g. JI

Know the benefits and disadvantages of soil based growing media, how to control a crop and how to handle the product for potting.

Topic 3.2: peat based mixes

Know the benefits and disadvantages of peat based growing media, how to control a crop and how to handle the product for potting

Topic 3.3: peat free mixes

Know the benefits and disadvantages of peat free growing media, how to control a crop and how to handle the product for potting

Topic 3.4: growing media ingredients

Know a range of growing media ingredients and their attributes

Topic 3.5: controlled release fertilisers and pesticides

Know of a range of controlled release fertilisers and pesticides and their attributes

Topic 3.5: specialist growing media

Know about specialist plant groups that require different treatment to normal terrestrial plants and will select appropriate media for these.

- epiphytic plants i.e. orchidaceae, bromeliaceae, ferns
- carnivorous plants
- cacti and succulents
- aquatics
- alpines
- geophytes
- Ericaceae

Learning outcome 4: principles of growing media management

Topic 4.1: air filled porosity

Know why air filled porosity (AFP) is important to cultivation in growing media the various tests available and why figures on AFP could be misleading. Know cultivation practices that minimise changing growing media AFP.

Topic 4.2: requirement for even water percolation through the media

Know why even spread of water though a growing media is important and can determine the irrigation method. Manage plants that show uneven growing media wetting

Topic 4.3: Stability of structure

Know that growing media needs to be stable, this particularly important in perennial woody crops that will be in a container for a long time.

Recognise when growing media is losing its structure and needs to be replaced.

Topic 4.4: soil fungi hydrophobic effects

Identify the hydrophobic effect that some wood saprophytes exhibit on growing media which prevents correct irrigation of the crop and take steps to correct this.

Unit 13 Plant health and biosecurity

What is this unit about?

The purpose of this unit is for the supervisor to know how to identify and manage plant pests, diseases and disorders that would affect the site or project. To provide facilities for training and awareness for the work team to identify and the reporting requirements of plant health issues. They will be able to undertake biosecurity measures to prevent transmission of pests and diseases. There are an increasing number of threats to plant health that must be recognised and controlled by those working in landscape and horticulture. Measures should be taken to prevent the transmission of pests and diseases from one site to another and the threat from imported plant material.

Learning outcomes

	Leaning Outcome	Topic
1	Identify, report and monitor the presence of pests, diseases and disorders	1.1) Pest, diseases, disorders, identification and reporting 1.2) Monitor for plant health problems 1.3) Health and safety, environmental legislation and good practice
2	Control pests, diseases and disorders	2.1) Control pests, diseases and disorders
3	Undertake biosecurity measures	3.1) Biosecurity measures 3.2) Inspection of imported plant material, prior to planting to identify plant health issues 3.3) Identify and isolate plant health issues and inform work team
4	Instruct and inform work teams of the threats to plant health, including its identification, reporting and control measures	4.1) Inform the work team through tool boxes talks and alerts of plant health issues and biosecurity risks 4.2) Inform the work team on biosecurity procedures and reporting of plant health issues

Learning outcome 1: identify and report the presence of pests, diseases and disorders

Topic 1.1: pest identification and reporting

The common types of pests, diseases and disorders, the problems they cause, biological controls and beneficial insects, cultural and chemical controls - that can be used to manage them:

- pest, problems caused and control method used
- disorder, problems caused and control method used
- disease, problem caused and control method used

Who to report the presence and extent of pests, diseases, disorders and biological control/beneficial insects and when they can be used.

Topic 1.2: monitor for plant health problems

The reasons for monitoring plants for health problems, and when to carry out monitoring of plants.

Monitor plants for health problems and establish the extent of the pest population, disease and any disorders

Topic 1.3: health and safety legislation and environmental good practice

Health and safety legislation, codes of practice and any additional requirements that cover the control of pests, diseases and disorders.

How environmental damage can be minimised when controlling pests, diseases and disorders.

The health and safety risks in monitoring and controlling pests, diseases and disorders.

Learning outcome 2: control pests, diseases and disorders

Topic 2.1: control pests, diseases and disorders

- select the correct control method to manage the pest, disease or disorder, using the correct equipment for the task.
- assist with applying control methods in a way that minimises the risk to non-target species and the surrounding environment.
- when and to whom to report any problems during pest, disease and disorder control.
- present information about the control activity clearly and accurately for recording purposes
- work in a work in a way that maintains health and safety, handling all materials carefully, safely and efficiently in accordance with instructions and organisational policy, and using the equipment according to the relevant legislation and manufacturers' instructions.
- prepare, maintain and store equipment in safe and effective working condition.

Learning outcome 3: undertake biosecurity measures

Topic 3.1: biosecurity measures

Monitor for plant health problems on site

Identify when plants are showing health problems

Monitor plant health problems on plant materials imported in to sites or horticultural operation sites.

Monitor site for notifiable species where horticultural operations could spread the problem species. Monitor for invasive species on site which could adversely affect horticultural operations and report its presence.

Carryout control of plant health problems or assist with control operations such as pesticide application, biosecurity actions, and integrated pest management.

Report the presence of adverse species which cause plant health issues or are legally required to be reported.

Learning outcome 4: informing work teams of biosecurity

Inform work team of the threats to biosecurity issues found on site and measures to identify, isolate and treat plant health issues

Through training, tool boxes talks, web tools, trade press and email alerts.

The supervisor to instruct the work team of actions to be taken in the event of a plant health issue being identified.

The supervisor once a plant issue has been identified to inform the line manager

The supervisor to have sufficient knowledge on plant health and biosecurity legislation to prevent further spread and identify notifiable plant health issues; use of https://planthealthportal.defra.gov.uk/ (UK plant health information portal).

Unit 14 Protection of biodiversity and heritage

What is this unit about?

The purpose of this unit is to give learners an understanding of the value of both biodiversity and heritage in the garden environment, as well as the means to protect them whilst maintaining acceptable horticultural standards

Learning outcomes:

	Learning Outcomes	Topic
1	Understand the legislation and designations concerning protection of biodiversity in a garden setting	1.1) Sites of Special Scientific Interest (SSSIs) (ASSSIs in NI) or National Nature Reserves (NNRs) 1.2) Plant and animal species that are given specific legal protection, 'European protected species', 'Birds of Conservation Concern' 1.3) 'Priority habitats and species' 1.4) Non Native Invasive species
2	Understand ways in which biodiversity can enhance gardens	2.1) Integrated Pest Management 2.2) Habitat creation 2.3) Visitor engagement
3	Understand the legislation and designations concerning protection of heritage features in a garden setting	3.1) Register of Historic Parks and Gardens 3.2) Register of Historic Buildings 3.3) County and local significance 3.4) Statement of significance
4	Understand the main developments in garden and plant history	4.1) Be able to outline a broad overview of design styles from Roman to the present day 4.2) Be able to outline a broad chronology of plant introductions and availability 4.3) Botanical gardens and their function
5	Understand how to maintain historic gardens whilst protecting heritage value	5.1) Research methods 5.2) Conservation/Restoration/ Recreation 5.5) Access

Learning outcome 1: understand the legislation concerning protection of biodiversity in a garden setting

Topic 1.1: Sites of Special Scientific Interest (SSSIs) (ASSSIs in NI) or National Nature Reserves (NNRs)

Know the legal implications of this Natural England designation for garden works

- permissions required for tree work
- permissions required for water works
- permissions for use of chemicals

- permissions for soil removal

Topic 1.2: plant and animal species that are given specific legal protection

Know the protected animals and plants likely to occur in a garden setting

- red squirrels
- badgers
- bats
- hazel dormice
- great crested newt
- otter
- lady's slipper orchid
- birds on the red or amber list

Topic 1.3: priority habitats and species

Know the types of priority habitats and species likely to occur in a garden setting and how to record them.

- chalk grassland
- ancient woodland
- garden ponds
- managing trees for habitat

Topic 1.4: non native invasive species

Know the plants and animals liable to occur in gardens that endanger biodiversity

- aquatic plants
- herbaceous plants
- woody plants
- invertebrates
- aquatic animals

Learning outcome 2: Understand ways in which biodiversity can enhance gardens

Topic 2.1: Integrated Pest Management

Know how to maintain a balance of wildlife to prevent build-up of pests

- insects
- birds

Topic 2.2: habitat creation

Know how to create habitats advantageous to wildlife

- identify relevant site restrictions or designations which impact on habitat creation
- ensure appropriate records are maintained and stored as required by relevant legislation

Topic 2.3: visitor engagement

Know how to communicate messages about biodiversity with garden visitors

Make use of survey records in interpretation and marketing

Learning outcome 3: Understand the legislation and designations concerning protection of heritage features in a garden setting

Topic 3.1: Register of Historic Parks and Gardens

Know the legal implications of being listed on Historic England's register.

- Grade I (more-or-less of international significance)
- Grade 2* (of national significance)
- Grade 2 (of considerable local / regional significance)

Topic 3.2: Register of Historic Buildings

Know the types of garden structures commonly listed under this register and the legal obligations concerning them.

Topic 3.3: county and local significance

Know the source of listing and conditions attached

Topic 3.4: statement of significance

How a statement of significance is developed and used in gardens

Learning outcome 4: Understand the main developments in garden and plant history

Topic 4.1: be able to outline a broad overview of design styles from Roman to the present day. Including Roman gardens, medieval, formal, landscape, picturesque, Victorian, arts and crafts and contemporary

Topic 4.2: be able to outline a broad chronology of plant introductions and their availability including knowledge of the tradition of plant hunters from the sixteenth century onwards, the introduction of exotic plants and their cultivation

Topic 4.3: be able to outline a brief history of Botanical Gardens and their function including scientific and conservation links

Learning outcome 5: Understand how to maintain historic gardens whilst protecting heritage value

Topic 5.1: research methods

- sources of information
- interpreting historical records
- use of Management Plans / Conservation Management Plans

Topic 5.2: conservation/Restoration/Recreation

- managing change in gardens
- managing change in garden structures
- understanding layers of garden history
- period planting
- maintaining historical accuracy
- supervising horticultural processes to maintain the historical integrity of landscapes

Topic 5.3: access

- balancing conservation with public access

Unit 15 Supervise routine maintenance and requisition repair of hard landscape features

What is this unit about?

Supervise the routine maintenance of hard landscape features relevant to the business activities and context of the site e.g. historic or environmental designations. Understand manufacturers' recommended inspection regimes and the importance of inspection records.

Understand works carried out by a landscaper and procurement routes

Understand how to specify repair works

Understand routine management of hard landscape features, hazards associated with failure / damage and maintenance regimes.

Learning outcomes

	Learning Outcome	Topic
1	Supervise routine maintenance and requisition repair of boundaries	1.1) Types of boundary and maintenance 1.2) Assess boundaries 1.3) Actions to prepare for work on boundaries 1.4) Supervise landscaper's repair or maintenance 1.5) Quality assure the works completed
2	Supervise routine maintenance and requisition repair of structures	2.1) Types of structures and maintenance 2.2) Assess structures 2.3) Actions to prepare for work on structures 2.4) Supervise landscaper's repair or maintenance 2.5) Quality assure the works completed
3	Supervise routine maintenance and requisition repair of surfaces	3.1) Types of surfaces and maintenance 3.2) Assess surfaces 3.3) Actions to prepare for work on surfaces 3.4) Supervise landscaper's repair or maintenance 3.5) Quality assure the works completed

Learning outcome 1: Supervise routine maintenance and requisition repair of boundaries.

Topic 1.1: types of boundaries and maintenance

Know the types of boundaries, e.g.

- hedge, bank, ditch
- fence (post and rail, post and wire, feather edge, close board, electric, netting, chainlink)
- wall (stone, brick, concrete).
- Understand routine maintenance requirements for boundaries

Topic 1.2: assess boundaries

Understand how to assess boundaries:

- identify boundary type

- assess condition, maintenance and any failure in boundary / repair requirements
- record failure in boundary and any risks associated with failure
- identify actions to either report or undertake maintenance
- allocate work

Topic 1.3: actions to prepare for work on boundaries

Understand planning for work on boundaries to include:

- specify works required
- estimate cost of repair and select appropriate procurement route
- Instructions to landscaper including factors associated with the location (e.g. power supply, waste disposal, equipment and materials storage)

This should take into account:

- health and safety
- public safety
- habitats / wildlife
- sustainable practice and environmental protection
- deviation from specification

Topic 1.4: supervise landscaper's repair or maintenance

- implement health and safety on site (method statement, risk assessment, PPE, safe working practices)
- supervise landscaper's repair or maintenance to specification
- supervise disposal of waste and site presentation

Topic 1.5: quality assure the works completed

- assess landscaper's work and produce a snagging list for action
- check site has been left safe, work is compliant with specification and waste has been removed from site
- sign off of landscaper's work

Learning outcome 2: Supervise routine maintenance and requisition repair of structures

Topic 2.1: types of structures and maintenance

Know the types of structures, e.g.

- gate
- stile
- raised bed
- composting area
- garden furniture (bench, table, bird box etc..)
- pergola
- steps
- retaining walls
- signage
- bollards
- foot bridges

Understand routine maintenance requirements for structures

Topic 2.2: assess structures

Assess structure:

- identify structure type
- assess condition, health and safety faults, maintenance / repair requirements of structures
- record health and safety faults maintenance / repair requirements of structures
- identify actions to either report or undertake maintenance
- allocate work

Topic 2.3: actions to prepare for work on structures

Plan for work on structures to include:

- specify works required
- estimate cost of repair and select appropriate procurement route
- instructions to landscaper including factors associated with the location (e.g. power supply, waste disposal, equipment and materials storage)

This should take into account:

- health and safety
- public safety
- habitats / wildlife
- sustainable practice and environmental protection
- deviation from specification

Topic 2.4: supervise landscaper's repair or maintenance

- implement health and safety on site (method statement, risk assessment, PPE, safe working practices)
- supervise landscaper's repair or maintenance to specification
- supervise disposal of waste and site presentation

Topic 2.5: quality assure the works completed

- assess landscaper's work and produce a snagging list for action
- check site has been left safe, work is compliant with specification and waste has been removed from site
- sign off of landscaper's work

Learning outcome 3: Supervise routine maintenance and repair surfaces

Topic 3.1: types of surfaces

Know the types of surfaces, e.g.

- solid (e.g. asphalt, decking, concrete, paving, artificial grass, rubber tiles & wetpour, resin bonded, hoggin) permeable and impermeable
- loose (e.g. gravel, wood chippings and sand)
- understand routine maintenance requirements for surfaces

Topic 3.2: assess surfaces

Assess surfaces:

- identify surface type
- assess condition, health and safety faults, maintenance / repair requirements
- record health and safety faults maintenance / repair requirements
- identify actions to either report or undertake maintenance
- allocate work

Topic 3.3: actions to prepare for work on surfaces

Plan for work on structures to include:

- specify works required
- estimate cost of repair and appropriate procurement route
- instructions to contractor including factors associated with the location (e.g. power supply, waste disposal, equipment and materials storage)

This should take into account:

- health and safety
- public safety
- habitats / wildlife
- sustainable practice and environmental protection
- deviation from specification

Topic 3.4: supervise repair or maintenance

- implement health and safety on site (method statement, risk assessment, PPE, safe working practices)
- supervise landscaper's repair or maintenance to specification
- supervise disposal of waste and site presentation

Topic 3.5: quality assure the works completed

- assess landscaper's work and produce a snagging list for action
- check site has been left safe, work is compliant with specification and waste has been removed from site
- sign off of landscaper's work

Unit 16 Tree safety for supervisors'

What is this unit about?

The purpose of this unit is for learners to know how recognise hazardous trees and to be aware of management practices to keep workers and members of the public safe. A basic understanding of tree inspection is required and knowledge of trees, however, apprentices need undertake the basic duty of care to site users. They must be aware of their own limitations and call on a qualified arborist to advise where they suspect a tree to be dangerous.

Learning outcomes

	Leaning Outcome	Topic
1	Know the health and safety implications of hazardous trees and the responsibility of the owner	1.6) Risk of tree failure is very low. 1.7) Benefits of trees are very high. 1.8) The concept of reasonable care. 1.9) Landowners duty of care
2	Determining the likelihood of risk	2.1) Proximity to members of the public/transport infrastructure. 2.2) Foreseeable weather events 2.3) Site management to increase safety. 2.4) Physical barriers to separate people from hazardous trees.
3	Causes of failure in trees	3.1) Branch failure. 3.2) Uprooting of trees. 3.3) Summer branch drop.
4	Visual tree assessment and the "red flags" for follow up inspection by an expert.	4.1) What to look for in a tree inspection 4.2) Red flags that indicate significant risk 4.3) Records to keep 4.4) Recommendations
5	Recognise own limitations	5.1) Importance of making management aware of your concerns. 5.2) Value of a second opinion 5.3) Services of an Arboricultural expert.

Learning outcome 1: know the health and safety implications of hazardous trees and the responsibility of the owner

Topic 1.1: risk of tree failure is very low.

Appreciate the risk of tree injury compared with other routine risks. That simple actions of not being under trees in adverse weather further lengthen such risks.

Topic 1.2: benefits of trees are very high

Know of the value of trees to the human environment and for wildlife.

- shade
- temperature moderation

- pollution control
- aesthetics and interest
- soil stabilisation
- food source for bees and insects
- habitat for wildlife

Topic 1.3: the concept of reasonable care.

Understand the need for landowners to reduce significant risks of tree failure by inspecting and zoning arboricultural intervention according to risk of injury but they are not expected to make all trees 100% safe or to gain access to all trees if vegetation or other barriers makes this impractical.

Topic 1.4: landowners duty of care

Know that landowners have a duty of care to users of their land this consists of duties expected by a "reasonable and prudent landowner"

Learning outcome 2: determining the likelihood of risk

Topic 2.1: proximity to members of the public/transport infrastructure.

Identify high traffic areas, i.e. entrances, major routes, meeting places, event venues, playgrounds, transport infrastructure etc., where people are likely to be in high numbers or for a significant part of the day or where they should be safe.

Topic 2.2: foreseeable weather events

Understand the impact of weather events on trees

- high winds
- very wet soil which can lubricate the root system
- wet sticky snow – causing branch failure on evergreen trees
- weather bomb rainfall can increase the weight of foliage under sudden high rainfall from a cloudburst
- lightning
- freezing rain
- fire under drought conditions

Topic 2.3: site management to increase safety

Know that arboricultural practices i.e. reducing branch length/ weight, thinning the crown, tree support systems can increase the safety margin under highly trafficked areas, there is also a role for identifying adverse weather form forecasts and restricting access to improve public safety.

Understand public health risks caused by pests i.e. oak processionary moth which may involve management intervention.

Know the role for choosing species for planting that have less problems i.e. don't split like crack willow or produce allergic response i.e. *Betula*

Topic 2.4: Physical barriers to separate people from hazardous trees

Know that removing the public from under trees can allow a more lenient management regime with less intervention to mitigate potential hazards. This might be afforded by long vegetation, water or a physical barrier, i.e. dead or living hedge. Such techniques maybe more appropriate in rural settings or nature reserves where dead wood and decay in trees is of value.

Learning outcome 3: causes of failure in trees

Topic 3.1: branch failure.

Understand that trees are living things and naturally lose branches. Many of these will be small and naturally thinned out in winter storms and cause little damage. Larger limbs can cause significant injury and death. These can be brought about by:

- weak attachment
- decay from a wound or fungal pathogen
- imbalance causing extension of growth in one direction
- change in the environment around the tree i.e. removal of trees, erection of a building

Topic 3.2: uprooting of trees.

Understand the root environment and that root health is very important to the stability of trees.

- interventions from utility companies and transport infrastructure can compromise the anchorage of trees.
- root compaction can cause root death and instability.
- soil conditions pay a role with water logging making soil heave more likely as well as damaging root health from asphyxiation.
- erosion of soil form streams, rivers or floodwater causes damage.

Know healthy trees carrying a full canopy of leaves can be at risk especially if away from the prevailing wind direction as they won't have grown to adapt to such stresses. Ivy can have a significant effect on the load of a tree which needs to be taken into account when judging the structural integrity of trees.

Topic 3.3: summer branch drop

Know summer branch drop that can affect some tree species under drought conditions in late summer.

- usually happens on hot calm days in the afternoon to branches that appear sound, it is more common in long horizontal limbs on mature specimens.
- the scientific explanation is unclear but is suspected to be related to internal water stress brought about by high day temperatures.
- it is very difficult to predict but just before failure an audible stress crack will be heard similar to a "gun shot".
- supervisors' could consider the wisdom of people sitting in the shade of such trees in the late summer if drought conditions have persevered through the summer.

Learning outcome 4: visual tree assessment and the "red flags" for follow up inspection by an expert.

Topic 4.1: what to look for in a tree inspection

A set of binoculars should be used for this task and understand the benefits of doing inspections in winter and summer.

- the general condition of the tree needs to be assessed so health of the crown.
- health of the branch and trunk scaffold, any co- dominate leaders with included bark in the branch union any imbalance in the crown from over extended branches any decay.
- on the trunk condition of the bark, any lesions pointing to decay any fungal bodies.
- the trunk / root union any fungal bodies any damage to bark or lesions.

- any soil heave, condition of the root zone.

Topic 4.2: red flags that indicate significant risk

The following should be investigated by a competent arborist

- a hanging or detached branch or split limb who's failure could cause injury
- wounds on a branch or stem that are over half the diameter of the branch or stem.
- imbalance to the crown by an over extended limb carrying a lot of weight
- branches with an acute angle of attachment and included bark causing a weak union
- heart wood rotting fungi on the base of a truck carrying a large scaffold of branches and foliage.
- root plate heave

Topic 4.3: records to keep

A short written report giving identification of tree and location and the answers to 4.1 and any red flags described in 4.2.

Photographic evidence showing multiple views of the tree and close-ups of any significant defects. These will prove useful evidence that the tree has been inspected.

Topic 4.4: recommendations

Supervisors' are not required to recommend arboricultural interventions. Their priority is to protect workers and users of the site

Learning outcome 5: recognise own limitations

Topic 5.1: importance of making management aware of your concerns

Supervisors' must report any concerns about tree safety to their manager and take measures to protect the public until a more permanent fix is decided upon.

Topic 5.2: value of a second opinion

Supervisors' should be aware that tree inspection will raise a number of issues, as trees are living organisms, and frequently they will not have the experience or knowledge to fully assess the risks, in these cases a second opinion from a colleague or manager will confirm an assessment.

Topic 5.3: services of an arboricultural expert

An arboricultural expert can bring with them professional experience and better assessment techniques.

- a full visual inspection
- inspection by climbing the tree
- Risistograph specialist probe and picus sonic detection system.
- they can advise about conservation areas and tree protection orders in relation to tree safety.

Unit 17 (H) Supervise plant propagation

What is this unit about?

The purpose of this unit is to provide learners with the knowledge and skills to supervise plant propagation environments and manage staff undertaking propagation. They will need to acquire or already possess basic skills in generative and vegetative propagation so they are proficient at mentoring and managing staff. Learners will also have a knowledge of more advanced propagation methods to save specimens in a garden situation i.e. grafting, layering and scaling.

This is part of the horticulture specialism.

Learning outcomes

	Leaning Outcome	Topic
1	Manage, monitor and adjust propagation environments for generative and vegetative propagation.	1.1) Understand conditions required for propagation including growing media and container systems. 1.2) Know how to monitor and adjust propagation environments. 1.3) Manage health and safety controls relating to Legionnaire's disease when using mist and fog systems. 1.4) Manage health and safety controls for handling plant material.
2	Develop propagation schedules.	2.1) Know about optimum rooting periods, germination times and plant production timing. 2.2) Determine planting density/plant requirements and work back to calculate propagation requirement and resources required. 2.3) Draw up a budget for propagation requirements.
3	Supervise vegetative plant production	3.1) Ensure suitable propagation material is collected. 3.2) Ensure cuttings are prepared in a suitable way. 3.3) Ensure correct insertion. 3.4) Guard against cross contamination and ensure accurate records and labelling. 3.5) Undertake specialist advanced techniques i.e. Grafting, Layering, Scaling
4	Supervise generative plant propagation	4.1) Ensure suitable propagation material is collected. 4.2) Ensure correct preparation and sowing generative (seed) material indoors. 4.3) Ensure correct preparation and sowing generative (seed) material outdoors. 4.4) Guard against cross contamination and ensure accurate records and labelling

		4.5)	Prepare generative (seed) material for storage.
5	Supervise production to ensure high quality finished plants. Ensure plant production is lawful.	5.1) 5.2) 5.3) 5.4)	Select appropriate production methods including fertilisation, irrigation, pruning, potting and crop protection. Supervise staff cultivating the crop. Ensure plants protected by PBR are not propagated for sale without obtaining a licence. Awareness of international agreement on genetic resources and control of trade. Maintain accurate records

Learning outcome 1: manage, monitor and adjust propagation environments for generative and vegetative propagation

Topic 1.1: understand conditions required for propagation including growing media and container systems.

Know the conditions required for propagation. Humidity, moisture, dark, light, temperature (base and aerial), carbon dioxide, oxygen, rooting hormone.

Understand acclimation to a production environment (weaning).

Know the range of structures and their basic maintenance for propagation. For example, sun tunnels, polythene tunnels, glasshouses, mist benches, fog rooms, contact polythene, shading.

Know the range of containers available advantages and disadvantages i.e. flats, plastic pots, fibre pots, paper pots, blocks, cell trays.

Select/mix appropriate propagation growing media for the subject and conditions.

Topic 1.2: know how to monitor and adjust propagation environments

Know commonly used propagation systems, how to control temperature, shading and humidity and use devices to record measurements.

Know how to troubleshoot systems for faults and rectify.

Topic 1.3: manage health and safety controls relating to Legionnaire's disease when using mist and fog systems

Know about the risk of Legionnaire's disease and demonstrate controls to reduce this hazard, able to write RAMS for these activities.

Topic 1.4: manage health and safety controls for the handling of plant material

Know that plants can be hazardous and demonstrate safety controls to ensure safe working practice. Plant material to be assessed for hazardous sap, hairs, sharps.

Learning outcome 2: develop propagation schedules

Topic 2.1: know about optimum rooting periods, germination times and plant production timing

Research optimum rooting periods and germination timing

Work out plant production timings from growth rates to accurately access finished plant timing

Topic 2.2: determine planting density/plant requirements and work back to calculate propagation requirement and resources required

- calculate plant numbers required
- write a production schedule that will calculate the number of plants that need to be propagated
- space, labour and material requirements to plan plant production
- use of Excel and Gantt charts to show production schedule

Topic 2.3: draw up a budget for propagation requirements

Source suppliers, obtain estimates of costs and work out the labour requirements for plant production.

Learning outcome 3: supervise vegetative plant production

Topic 3.1: ensure suitable propagation material is collected.

Determine the type and quality of propagation material ensuing it has juvenility and the ability to resource itself through the propagation process. Plant material must be true to type, pest and disease free. Propagation material to be accurately labelled and maintained in a suitable environment to maintain freshness.

Topic 3.2: ensure cuttings are prepared in a suitable way.

Supervise and mentor staff so they can prepare cuttings with a propagation knife in a professional manner and to an acceptable work rate.

Topic 3.3: ensure correct insertion

Ensure propagation containers are correctly prepared and cuttings struck in accordance with best industry practices. Cuttings to be watered, labelled and put into a suitable propagation environment without delay.

Topic 3.4: guard against cross contamination and ensure accurate records and labelling.

Ensure that systems of work avoid cross contamination and that accurate records are maintained showing success rates.

Ensure plants are correctly laid out according to standard nursery practice (front to back, left to right).

Understand the importance of record keeping.

Topic 3.5: undertake specialist advanced techniques i.e. Grafting, Layering, Scaling

Carry out more advanced propagation. Bench grafting of trees and shrubs covering the pre conditioning of stock and scion material, making the graft and tying, aftercare of the graft to union formed, training of the grafted plant.

Perform simple layering operations in a garden setting and be able to carry out scaling of bulbs.

Learning outcome 4: supervise generative plant propagation

Topic 4.1: ensure suitable propagation material is collected

Ensure that fertile seed is collected and cleaned, any fruits are processed and cleaned to prevent fermentation of seeds.

Understand the possibility of hybridisation and be able to use controlled pollination and emasculation to produce pure seed.

Topic 4.2: ensure correct preparation and sowing generative (seed) material indoors.

Supervise and mentor staff in seed sowing techniques for raising seed indoors.

Topic 4.3: ensure correct preparation and sowing generative (seed) material outdoors.

Supervise and mentor staff in seed sowing techniques for raising seed outdoors including preparation of seedbeds, sowing systems etc.

Topic 4.4: guard against cross contamination and ensure accurate records and labelling

Ensure that systems of work avoid cross contamination and that seed batches are accurately labelled and resulting germination rates are recorded to show success.

Understand the importance of accurate record keeping.

Topic 4.5: prepare generative (seed) material for storage.

A knowledge of seed types, orthodox, recalcitrant and intermediate together with dormancy systems and ways of breaking dormancy.

Awareness of suitability of taxa for long term storage/exchange.

Seed storage techniques along with accurate record keeping of collections and appreciation of provenance.

Learning outcome 5: supervise production to ensure high quality finished plants. Ensure that plant production is lawful.

Topic 5.1: select appropriate production methods including fertilisation, irrigation, pruning, potting and crop protection.

Determine production methods and timing of control interventions.

Topic 5.2: Supervise staff cultivating the crop.

Supervise the quality of production operations and instruct staff.

Topic 5.3: ensure plants protected by Plant Breeders Rights (PBR) are not propagated for sale without obtaining a licence.

Understand the PBR system and obligations for licensing if selling/ exchanging plants. Internal production for Garden use is allowed. Procedures for commercialising plant material.

Topic 5.4: awareness of international agreement on genetic resources and control of trade. Maintain accurate records.

Understand obligations under Nagoya Protocol and CITES and work within these agreements. Ensure plant material is accurately labelled and know why this is important.

Stage material according to standard nursery practice (front to back, left to right).

Unit 18 (H) Ornamental aquatic environments

What is this unit about?

The purpose of this unit is to give an understanding of different types of aquatic environments and their maintenance. It covers the management of soft landscaping elements and the risks to aquatic environments from external factors.

This is part of the horticulture specialism.

Learning outcomes

	Learning Outcomes	Topic
1	Understand types of water feature and aquatic environments	1.1) Types of feature 1.2) Purpose of feature 1.3) Requirements for plant and animal species
2	Understand maintenance requirements of water features	2.1) Water maintenance 2.2) Protection from predators 2.3) Maintenance of aquatic plants
3	The risk to aquatic environments from horticultural operations	3.1) Mechanical damage 3.2) Fertiliser and pesticide runoff
4	The role of plants in aquatic environments	4.1) Types of aquatic plants 4.2) Oxygenators 4.3) Invasive species

Learning outcome 1: understand types of water feature and aquatic environments

Topic 1.1: types of feature

Know different types of aquatic features for a horticultural environment, including formal and informal ponds, lakes, waterways, rills and fountains.

Topic 1.2: purpose of feature

Understand the differing purposes of a water feature, including formal and informal ornamental, wildlife and ecosystem, naturally occurring.

Topic 1.3: requirements for plant and animal species

Understand the necessity to provide a balanced ecosystem and situation for aquatic plants and animals, including:

- size of area, particularly depth and volume of water
- provision of planting areas and shelves
- freezing and heating issues
- nutrient balance
- inclusion of fish and animals

Learning outcome 2: understand maintenance requirements of water features

Topic 2.1: water maintenance

Understand the methods of maintaining healthy water in ponds and water features, including maintaining water levels, dealing with freezing and thawing and removing algae and debris.

Topic 2.2: protection from predators

Know the methods of protecting ponds and their contents from predators, including covering and decoys.

Topic 2.3: maintenance of aquatic plants

Know how to maintain aquatic plants throughout the year, including;

- management of oxygenator levels in ponds
- division and repotting of plants

Learning outcome 3: the risk to aquatic environments from horticultural operations

Topic 3.1: mechanical damage

Understand the risks of mechanical damage to ponds and water features and methods of avoidance.

Topic 3.2: fertiliser and pesticide runoff

Understand the risks posed from the runoff of contaminants and pesticides. Including effects of:

- weather
- soil conditions
- irrigation
- pesticide or fertiliser application
- vegetation
- topography

Learning outcome 4: the role of plants in aquatic environments

Topic 4.1: types of aquatic plants

Know the different types of aquatic plants and be able to name two from each of the following categories:

- deep water aquatics
- floating plants
- marginals

Topic 4.2: oxygenators

Understand the role of oxygenators in water features and their cultivation as submerged aquatics.

Topic 4.3: invasive species

Understand the problems caused by invasive plant and animal species in water features, how to avoid them and how to remedy an invasive population.

Unit 19 (H) Maintaining ornamental areas

What is this unit about?

The purpose of this unit is to give an understanding of the maintenance processes necessary to optimise displays for a variety of purposes, and to understand the wider implications of decisions. The learner should be able to plan the maintenance of an area taking into account requirements and deployment of people and resources.

This is part of the horticulture specialism.

Learning outcomes

	Learning Outcomes	Topic
1	Supervise staff in pruning and training techniques to a range of plants	1.1) Pruning for a purpose 1.2) Methods of pruning 1.3) Understanding legislation and regulations
2	Supervise the cultivation and maintenance of soft landscape elements	2.1) Trees and shrubs 2.2) Herbaceous 2.3) Bedding and annual displays 2.4) Planning and resourcing
3	Develop maintenance programmes for horticultural sites	3.1) Assessment of requirements 3.2) Development of a plan 3.3) Schedule work to protect existing features 3.4) Evaluation of a plan

Learning outcome 1: supervise staff in pruning and training techniques to a range of plants

Topic 1.1: able to train and supervise staff to prune a range of plants for a variety of purposes in different conditions

- ornamental specimen, formative and routine pruning
- hedges in accordance with growth patterns
- fruit trees and bushes for optimal fruiting
- pruning to train bush forms; wall-trained shrubs; clinging and self-supporting climbing plants
- effects of climate and weather

Topic 1.2: able to explain different methods of pruning and implications

- secateurs, loppers, saws, mechanised tools
- health and safety implications
- resourcing and time implications of the above methods

Topic 1.2: know the legal, environmental and health and safety requirements relating to pruning

- trees and shrubs (TPOs, Wildlife and Countryside Act)
- hedges (Wildlife and Countryside Act)
- Health and Safety at Work Act 1974, Working at Heights Regulations 2005

Learning outcome 2: supervise the cultivation and maintenance of soft landscape elements

Topic 2.1: trees and shrubs

Understand techniques and strategies of the maintenance of trees and shrubs and apply these to the planning and management of an area:

- planting trees and shrubs
- support and staking
- pest and pathogen monitoring and control
- weed monitoring and control
- mulching
- irrigation
- fertilising
- formative pruning
- maintenance pruning
- identification of and solutions to problems relating to planting or maintenance programmes including planting depth, girdling, restricted roots, damage to plant
- identification of and solutions to problems relating to cultivation practices including too much or too little irrigation, pesticide damage, animal damage

The long term implications and benefits of different techniques of achieving the above should be understood, including integrated approaches to pest and weed management.

Topic 2.2: herbaceous planting

Understand techniques and strategies of the maintenance of herbaceous plants and apply these to the planning and management of an area:

- preparation of ground
- understanding of varying styles of herbaceous planting and use
- calculations of plants required
- planting
- support and staking
- pest and pathogen monitoring and control
- weed monitoring and control
- mulching
- lifting tender perennials
- dividing
- deadheading
- irrigation
- fertilising
- cutting back

The long term implications and benefits of different techniques of achieving the above should be understood, including integrated approaches to pest and weed management.

Topic 2.3: bedding and annual displays

Understand techniques and strategies of the maintenance of bedding and annual displays and apply these to the planning and management of an area:

- preparation of ground
- understanding of different annual and bedding styles
- calculations of plants required
- planting
- support and staking
- pest and pathogen monitoring and control
- weed monitoring and control
- deadheading

- irrigation
- fertilising
- removal

The long term implications and benefits of different techniques of achieving the above should be understood, including integrated approaches to pest and weed management.

Topic 2.4: planning and resourcing

Be able to plan the development of an area of planting including:

- resource requirements
- staffing requirements
- identify and adjust for site specific requirements relating to the processes in topics 2.1-2.3
- deploy resources and work to a timescale

Learning outcome 3: develop maintenance plans for horticultural sites

Topic 3.1: assessment of requirements

Assess the maintenance requirements of an area of planting, taking into account:

- the site and situation
- external factors such as public access and wildlife
- the style of planting and maturity

Topic 3.2: development of a plan

Develop a yearly maintenance plan for an area taking into account the elements stated in Topic 3.1. The plan should include,

- weed control
- pest and pathogen monitoring and control
- yearly maintenance requirements of plants in the area
- renovation and replacement
- mulching
- irrigation and fertilisation
- health and safety monitoring

Topic 3.3: schedule work

Schedule work and ensure it is undertaken in line with the plan.

Understand how processes of development and maintenance may impact negatively on existing features. Know appropriate methods to minimise impact or reinstate following work. Features which may be impacted include:

- irrigation systems
- turf
- aquatic environments
- historical features

Topic 3.4: evaluation of plan

Know how to evaluate a maintenance plan while in progress to take account of changing situations or unexpected circumstances. Factors to include

- weather
- unexpected findings and situations
- staffing requirements

- resources

Understand how to react to external factors and adjust accordingly.

Unit 20 (H) Use and maintain irrigation equipment

What is this unit about?

The purpose of this unit is to understand the best irrigation systems that are available for different situations in the garden, to ensure accurate and timely water application. Learners should be able to plan and supervise their installation and maintain them according to manufacturers' instructions.

This is part of the horticulture specialism.

Learning outcomes

	Learning Outcomes	Topic
1	Choose the best irrigation for different situations	1.1) Permanently installed drip/seep hoses. 1.2) Permanently installed sprinkler and rotary systems. 1.3) Temporary/movable systems for establishing new areas or dealing with drought.
2	Plan and supervise installation of irrigation systems	2.1) Permanently installed drip/seep hoses. 2.2) Permanently installed sprinkler and rotary systems 2.3) Temporary/movable systems for establishing new areas or dealing with drought.
3	Plan and supervise routine maintenance fault finding and repair.	3.1) Routine maintenance 3.2) Maintaining correct pressure 3.3) Timing devices.

Learning outcome 1: choose the best irrigation for different situations

Topic 1.1: permanently installed drip/seep hoses.

Understand whether this system suits different areas:

- newly sown/turfed lawn
- established lawn areas
- shrub beds
- annual bedding displays
- herbaceous borders
- vegetable growing
- soft fruit
- top fruit

Topic 1.2: permanently installed sprinkler and rotary systems

Understand whether this system suits different areas:

- newly sown/turfed lawn
- established lawn areas
- shrub beds
- annual bedding displays
- herbaceous borders

- vegetable growing

Topic 1.3: temporary/movable systems for establishing new areas or dealing with drought.

Understand whether this system suits different areas:

- newly sown/turfed lawn
- established lawn areas
- shrub beds
- annual bedding displays
- herbaceous borders
- vegetable growing
- soft fruit
- top fruit

Learning outcome 2: plan and supervise installation of irrigation systems

Topic 2.1: Permanently installed drip/seep hoses

- establish requirements for irrigation
- survey the site
- calculate the correct amount of pipe, connectors and timing mechanisms
- excavate to the correct depth according to manufacturers' instructions
- for surface laid pipes use appropriate fixings
- connect to mains/rain water harvesting/bore hole/grey water systems and test for leakage
- bury or conceal using appropriate materials
- set timers or routines to ensure optimum conditions for plants

Topic 2.2: Permanently installed sprinkler and rotary systems

- procure suitable system for site
- manage contract for installation

Topic 2.3: Temporary/movable systems for establishing new areas or dealing with drought

- position equipment to avoid waste due to wind, hard surfaces etc.
- assess best timing for use
- ensure health and safety of staff and visitors during use and clearing site

Learning outcome 3: Plan and supervise routine maintenance, fault finding and repair

Topic 3.1: Routine maintenance

- set up cleaning regime for nozzles, sprinklers etc
- plan and carry out seasonal shutdown routine
- keep regular records of maintenance

Topic 3.2: Fault finding

- check for blockage and leaks
- maintain correct pressure and calibration
- ensure even distribution of water

Topic 3.3: Repair

- undertake repairs using spare parts as required
- manage contractors as per work specification or warranty

Unit 21 (H) Supervise construction, establishment and maintenance of ornamental and amenity turf areas

What is this unit about?

The purpose of this unit is to provide learners with an understanding of how to construct and establish sports and amenity turf areas and how these can be applied in practice. The learner will be able to develop practical, work-related skills alongside the knowledge involved in the preparation and construction of sports and other turf surfaces, including investigation of a suitable site, grading, drainage, land cultivation and establishment of the sports or amenity turf surface.

This is part of the horticulture specialism.

Learning outcomes

	Learning Outcome	Topic
1	Understand supervision of winter and summer sports turf surfaces to Performance Quality Standards	1.1) Soil ecosystem assessment for the production of calendars of work 1.2) Strategies to reduce the effects of wear on sports turf surfaces 1.3) Monitoring weather and climatic conditions for sports turf surfaces 1.4) Using a maintenance plan and resource file to maintain surfaces to a stated PQS
2	Supervise maintenance of winter and summer sports turf surfaces to Performance Quality Standards (PQS)	2.1) PQS data collection for the assessment of the level of quality of a sports turf surface 2.2) Calendars of work for maintaining sports turf surfaces to a stated level of quality 2.3) Produce resource files for a sports turf surface 2.4) Carry out maintenance activities on winter and summer sports turf surfaces
3	Evaluate maintenance operations and their contribution to overall quality	3.1) Monitor the impact of maintenance operations on the quality of sports turf surfaces 3.2) Monitor material inputs and their impact on quality 3.3) Collect data for assessing the overall quality of sports turf surfaces

4	Understand the determination and maintenance of the level of quality of sports turf surfaces	4.1) 4.2) 4.3)	Using Performance Quality Standards (PQS) to assess the quality of a turf surface Levels of quality for specific sports turf surfaces Material inputs and maintenance operations

Learning outcome 1: Understand supervision of winter and summer sports turf surfaces to Performance Quality Standards

Topic 1.1: soil ecosystem assessment for the production of calendars of work

Undertake assessments of the soil to include rootzone composition, depth, structure, bulk density, aeration, moisture status, nutrient status and organic matter status including thatch.

Understand why the soil ecosystem must be assessed before producing a maintenance plan and they will then use this information when producing their calendars of work for winter and summer sports turf surfaces.

Topic 1.2: strategies to reduce the effects of wear on sports turf surfaces

Understand a range of strategies to reduce the effects of wear considering the following maintenance options:

- inputs
- choice of equipment and machines and season of use
- frequencies, depth, duration, direction of travel, rotation and intensity of utilised areas
- sequence of different operations.

Topic 1.3: monitoring weather and climatic conditions for sports turf surfaces

Review a range of weather and climate data

- current season information compared with longer term averages
- quantity of precipitation
- quantity and quality of light
- shading effects
- seasonal and unseasonal frost
- maximum and minimum temperatures
- air movement
- localised and catastrophic climatic events.
- Prevailing local weather conditions

Topic 1.4: using a maintenance plan and resource file to maintain surfaces to a stated PQS

Understand how a maintenance plan contributes to the maintenance of surfaces to the desired standard.

Understand how consideration of the following factors contributes to the successful management of the surface. Factors to include:

- the operations required during the year
- the equipment/machinery required
- frequencies and timing, duration, intensity, depth, direction
- high wear areas
- planning turf for events or fixtures

a pest, disease and disorder management strategy.

Learning outcome 2: supervise maintenance of winter and summer sports turf surfaces to Performance Quality Standards (PQS)

Topic 2.1: PQS data collection for the assessment of the level of quality of a sports turf surface

Know levels of Performance Quality Standards:

- basic (recreational use)
- standard (club use)
- high (national and international competition use)
- through the use of a range of tests

Know the level of quality will be assessed in three areas

- structural quality: determines playing quality and impacts on presentational quality eg total ground cover, bare areas, desirable grass species, length of herbage, weeds, moss, algae and lichen, root depth, thatch, rootzone medium, evenness, gradient, pests, diseases, infiltration rate
- presentational quality: eg appearance, visibility of and width of markings, surface debris, and sward colour
- playing quality: eg vertical ball bounce, traction, ball roll, spin, hardness, and green speed.

Topic 2.2: calendars of work for maintaining sports turf surfaces to a stated level of quality

Understand the operations required during the year to maintain winter and summer sports turf surfaces.

Determine the most appropriate time of year to undertake these maintenance operations and stipulate the following for each operation:

- the equipment/machinery required
- frequencies and timing
- duration
- intensity
- depth and direction

Within their maintenance calendar they must also highlight methods of managing high wear areas and state a pest, disease and disorder management strategy.

Topic 2.3: produce resource plans for a sports turf surface

Produce a management plan to include details of all resources, including personnel, materials, equipment, machinery and finances.

The management plan will fully represent the resources and inputs needed to maintain winter and summer sports turf surfaces.

Topic 2.4: supervise maintenance activities on winter and summer sports turf surfaces

Assess the surfaces of winter and summer sports turf areas and supervise maintenance tasks as required to include:

- mowing
- edging
- aeration
- scarification
- top dressing
- rolling
- turfing
- seeding
- brushing/switching
- fertilizing
- application of plant protection products.

Learning outcome 3: evaluate maintenance operations and their contribution to overall quality

Topic 3.1: monitor the impact of maintenance operations on the quality of sports turf surfaces

Monitor a range of operations: mowing, edging (where a non-turf surface is used), aeration, scarification, topdressing, rolling, turfing, seeding, irrigation, brushing/switching, fertilising and marking out to assess their impact on the overall quality of specific sports turf surfaces and evaluate how each is contributing to the overall quality.

Topic 3.2: monitor material inputs and their impact on quality

Monitor and evaluate material inputs: eg topdressing, seed, turf, water, fertiliser, labour, finance and determine how each is contributing to the quality of the surface.

Topic 3.3: collect data for assessing the overall quality of sports turf surfaces

Collect a range of PQS data:

- structural: determines playing quality and impacts on presentational quality eg total ground cover, bare areas, desirable grass species, length of herbage, weeds, moss, algae and lichen, root depth, thatch, rootzone medium, evenness, gradient, pests, diseases, infiltration rate
- presentational: e.g. appearance, visibility of and width of markings, surface debris, and sward colour
- playing: e.g. vertical ball bounce, traction, ball roll, hardness, spin, green speed.

Learning outcome 4: understand the determination and maintenance of the level of quality of sports turf surfaces

Topic 4.1: Using Performance Quality Standards (PQS) to assess the quality of a turf surface

Understand the advantages and disadvantages of using Performance Quality Standards (PQS) to assess the quality of specific surfaces.

Understand that this data is used to inform management decisions, determine maintenance requirement accurately, justify the purchase of equipment/resources, allow effective use of inputs, reduce wastage and determine the carrying capacity of the turf.

Topic 4.2: Levels of quality for specific sports turf surfaces

Understand the different levels of quality, basic, standard and high, for specific surfaces and understand when they would be acceptable.

Consider the 3 areas of performance quality assessment when making this decision:

- structural: determines playing quality and impacts on presentational quality eg total ground cover, bare areas, desirable grass species, length of herbage, weeds, moss, algae and lichen, root depth, thatch, rootzone medium, evenness, gradient, pests, diseases, infiltration rate
- presentational: e.g. appearance, visibility of and width of markings, surface debris, and sward colour
- playing: e.g. vertical ball bounce, traction, ball roll, spin, hardness

Topic 4.3: material inputs and maintenance operations

Understand the purposes of reviewing material inputs and maintenance operations to obtain maximum use from the surface.

Understand efficient use of available resources and effective operations to maximise the potential of the turf surface.

Consider minimal waste and environmental impacts

Unit 22 (LC) Site surveying, levelling and setting out

What is this unit about?

Cable and service avoidance techniques e.g. cable avoidance tools and interpreting diagrams to avoid water, gas and electricity. Measure and set out a site from a construction drawing. Interpret job specification and construction drawing including planning operations for implementation. Site surveying and measuring techniques e.g. electronic and manual methods.

This is part of the landscape construction specialism.

Learning outcomes

	Learning Outcomes	Topic
1	Understand site survey equipment and techniques	1.1) Use and maintenance of surveying equipment 1.2) Principles and processes of surveying techniques
2	Measure site dimensions and levels	2.1) Use a range of survey equipment 2.2) Record and collate site readings 2.3) Present survey data in appropriate format
3	Understand the presentation of survey data	3.1) Purpose and application of different survey types 3.2) Laying out, plotting and drafting survey drawings from field data
4	Set out on the ground from plans, including shapes and levels	4.1) Mark out sites from plans 4.2) Mark out shapes 4.3) Set out levels and falls

Learning outcome 1: understand site survey equipment and techniques

Topic 1.1: use and maintenance of surveying equipment

Know the range of surveying equipment and their required maintenance, including ranging rods/poles, tapes, compass, optical equipment, height measuring devices and electronic measuring devices, Global Positioning Systems (GPS), optical or laser levels and theodolites of various types and associated equipment.

Topic 1.2: principles and processes of surveying techniques

Understand the principles of surveying for a range of situations and how they may be used in practice, to include:

- linear measurement
- right angles
- bearing and offsets
- triangulation and trigonometry
- traverse and radial surveys
- sloping ground
- adjustments,
- vertical angles
- height measuring,
- levelling and contour surveys
- optical measuring

- GPS grid referencing and altitude location
- total stations
- maps, plans, IT based maps and other information sources
- the importance of benchmarks (permanent and temporary)

Understand the process of surveying techniques and the importance of reconnaissance, observation, measurement, recording presentation, booking systems and symbols, site problems, obstacles and solutions, sources of error, adjustments and degrees of accuracy, selection of the most appropriate system for given site conditions

Learning outcome 2: measure site dimensions and levels

Topic 2.1: use a range of survey equipment

Understand the benefits and limitations of tools/equipment used.

Use survey equipment, covering safe site operations and behaviour and risk assessment as described in the health and safety unit. A sensible datum should be chosen. The equipment may include ranging rods/poles, tapes, compass, optical equipment, height measuring devices and electronic measuring devices, Global Positioning Systems (GPS), Geographical Information Systems (GIS), optical or laser levels and theodolites of various types and associated equipment.

Topic 2.2: record and collate site readings

Accurately record and collate the site readings and then present the survey data using an appropriate and conventional format. This should include:

- structures
- hard landscape features
- vegetation
- hazardous structure and materials
- access points
- access/egress
- drains
- overhead services
- underground services
- ground conditions
- soil type

Topic 2.3: present survey data in appropriate format

Collate information from site survey and either supply to relevant specialist teams or the designer.

Learning outcome 3: understand the presentation of survey data

Topic 3.1: purpose and application of different survey types

Understand the purpose and application of types of survey plan, use of metric scale and units of measurement, bearings and grid references.

Topic 3.2: Laying out, plotting and drafting survey drawings from field data

Understand the processes for laying out, plotting and drafting including standard techniques, standard conventions, symbols and signs, lettering symbols, position, size and style, title

blocks and labelling, orientation and types of north, radial and trigonometric methods of plotting, terminology.

Understand how to calculate levels and interpolate contours onto survey plans and how to calculate true scale, reduce error, adjust and the importance of accuracy. Know what tools can aid accuracy.

Understand that survey drawings could be produced manually or using Computer Aided Design (CAD)

Learning outcome 4: set out on the ground from plans, including shapes and levels

Topic 4.1: mark out sites from plans

Mark out sites from plans of different scales (including process of conversion), the position of structures, features and plants.

Use suitable equipment.

Topic 4.2: mark out shapes

Mark out accurate right angles and mark out rectangles, circles, hexagons, ellipses and irregular shapes to the correct dimensions.

Set out processes in constructing right angle by intersecting arcs and by Pythagoras' theorem (3, 4, 5 triangle).

Topic 4.3: set out levels and falls

Identify datum point and set out levels and falls using scaled plans ensuring specified orientation, setting out line to given length, establishing level(s) to given parameters.

Unit 23 (LC) Landscape Construction Techniques

What is this unit about?

This unit covers any landscape construction techniques not already in the level 2 horticulture / landscape operative apprenticeship.

This is part of the landscape construction specialism.

Learning Outcomes

	Learning Outcomes	Topic
1	Install irrigation systems e.g. drip, sprinkler and rotary systems	1.1) Install irrigation systems
2	Install drainage systems	2.1) Principals of drainage systems 2.2) Install pipe drainage systems 2.3) Diagnose faults and problems with installed drainage systems 2.4) Maintain or repair drainage systems
3	Sources of water and legal requirements	3.1) Know sources of water 3.2) Legal requirements and legislation associated with water management
4	Lay out and plant in open ground	4.1) Lay out plants 4.2) Plant container grown and bare root plants 4.3) Aftercare of plants
5	Prepare sites for landscape works	5.1) Form ground profiles for landscape works 5.2) Understand formation of ground profiles for landscape works
6	Turf Installation	6.1) Site properties 6.2) Site preparation 6.3) Project specification and planning 6.4) Use of equipment 6.5) Installation 6.6) Initial maintenance to establishment

Learning outcome 1: Install irrigation systems e.g. drip, sprinkler and rotary systems

Topic 1.1: Permanently installed drip/seep hoses

- establish requirements for irrigation
- survey the site
- calculate the correct amount of pipe, connectors and timing mechanisms
- excavate to the correct depth according to manufacturers' instructions
- for surface laid pipes use appropriate fixings
- connect to mains/rain water harvesting/bore hole/grey water systems and test for leakage
- bury or conceal using appropriate materials
- set timers or routines to ensure optimum conditions for plants

Topic 1.2: Permanently installed sprinkler and rotary systems

- procure suitable system for site
- manage contract for installation

Topic 1.3: Temporary/movable systems for establishing new areas or dealing with drought

- position equipment to avoid waste due to wind, hard surfaces etc.
- assess best timing for use
- ensure health and safety of staff and visitors during use and clearing site

Learning Outcome 2: Drainage Systems

Topic 2.1: principals of drainage systems

understand systems and principles of land drainage, the range of methods available, advantages and disadvantages of each including sub-soiling, open ditches, mole ploughing, pipe drainage, including silt traps and outfalls, mains, laterals and backfill.

Understand typical layouts, dimensions, soil types, principles of maximum, minimum and optimum falls of drains, characteristics of suitable backfill

Topic 2.2: Install pipe drainage systems

install a part of a pipe drainage system to given specifications, by hand and/or machine, pipes can be tiles or plastic, installation of a sections of pipe; establishment of a fall, lay pipes, installation of outfalls to suitable locations, backfill materials identified/used

Topic 2.3: diagnose faults and problems with installed drainage systems

Diagnose the common faults and problems associated with drainage systems including blockages to pipes, outfall, ditches, and soakaways: breakages to pipes, silt, vermin, collapse of mole channels, compaction of the soil

Topic 2.4: maintenance or repair of drainage system

Routine maintenance or repair of a drainage system which may include repairs to open ditch and piped drainage systems, clearing silt from silt traps, clearing ditches, repairing outfalls, clearing blockages.

Learning Outcome 3: Sources of water and legal requirements

Topic 3.1: know sources of water

know sources of water used in horticulture, to include mains, boreholes, ponds, reservoirs, lakes, tanks, captured rain water, recycled/grey water

Topic 3.2: legal requirements and legislation associated with water management

Understand the legal requirements and legislation associated with water management including Health and safety, environmental impact assessment, ground water, abstraction, pollution, quality and quantity adherence to current legislation and best practice.

Know relevant current legislation to include Environmental Act 1995, Water Act 1965 (as amended), Conservation Regulations (1994) (as amended), Countryside and Rights of Way Act

2000, The Water Resources (Abstract and Impounding) Regulations 2006, Sustainable Urban Drainage Systems (SUDS) Regulations 1997 (as amended).

Know where to gain advice and guidance through; Environment Agency for abstraction and impounding licence(s) (temporary/permanent), water rights trading, Department for Environment, Food and Rural Affairs (Defra), Welsh Assembly Government, Scottish Executive Environment and Rural Affairs Department (SEERAD), Department of Agriculture and Rural Affairs (Northern Ireland).

Learning outcome 4: lay out and plant in open ground

Topic 4.1: lay out plants

Lay out plants to a supplied brief including correct spacing.

Complete this task safely and efficiently with minimal damage to the ground and surrounding area.

Topic 4.2: plant container grown and bare root plants

Plant a variety of plants with differing establishment requirements.

Understand the importance of seasonality and climate on planting requirements.

Plant the following efficiently and successfully:

- bedding plants
- vegetable transplants
- perennials
- shrubs
- trees
- bulbs, corms or tubers

Understand the differences in planting methods for the above categories of plants in relation to:

- longevity and lifecycle
- habit
- speed of establishment
- horticultural context
- bare root or containerised
- nursery line / pre-treatment of rootball

Topic 4.3: aftercare of plants

Care for newly established plants in the weeks following planting.

Carry out:

- irrigation
- feeding
- protection and pest control
- mulching
- formative pruning
- vegetation control
- plant support

Learning Outcome 5: Prepare sites for landscape works

Topic 5.1: form ground profiles for landscape works

Set out site according to the plan/specification

Promote health and safety and environmental good practice

Form profiles that meet the requirements of the plan and subsequent work:

- soft landscape construction
- hard landscape construction

Form profiles that are to specification and required levels and gradients to include

- subsoil gradient
- keeping even topsoil cover

Monitor progress and prepare according to specification two of the following surfaces:

- flat
- gradient
- steps

Keep the site in a tidy and suitable condition for subsequent works following operations

Maintain effective working relations throughout with the relevant people

Dispose of wasted in accordance with legislative requirements and codes of practice

Topic 5.2: understand formation of ground profiles for landscape works

Know:

- construction standards and regulations for operations involving changes of level
- the differences in construction requirements for soft and hard landscape construction
- how to interpret landscape plans and specifications
- the methods and equipment for setting out in the horizontal and vertical planes
- the mathematical and geometrical principles for setting out
- how to calculate gradients, risers and treads
- the design of steps
- the methods of detecting underground services
- the typical contingencies and how to handle these effectively
- the types of problems and how to resolve these and whom these should be reported to
- how to store topsoil

Learning outcome 6: Turf Installation

Topic 6.1: Site properties

Understand the different characteristics of a site including:

- soil structure
- soil texture
- drainage
- PH
- nutrients
- microclimates
- wildlife habitats
- water courses
- underground services

Topic 6.2: Site preparation

Select the correct procedures for site preparation including:

- vegetation clearance using physical and chemical methods
- debris clearance
- cultivations, amelioration of the rootzone
- grading, levelling, shaping, consolidation
- comply with relevant legislation

Topic 6.3: Project specification and planning

Specification to be guided by industry standards, Hybrid turf, artificial, turf grid reinforcement systems and grass/wild flora mixes may have to be considered.

Plans should be easy to interpret by all involved

Specification could include:

- correct grass species selected for use
- method of installation
- pre-seeding/turfing/hydro seeding fertiliser
- depth of planting
- quantities and quality of materials
- irrigation and drainage requirements
- timescale
- waste management

Planning should consider:

- weather
- site conditions
- availability of materials and equipment
- staffing
- budget
- environmental impact
- Use of outside contractors

The use of Gantt charts will aid planning

Topic 6.4: Use of equipment

All equipment used should comply with the relevant legislation, being safe and correctly maintained.

The correct PPE is used

Operators should be suitably trained to industry standards.

The avoidance of environmental damage may need to be considered.

Topic 6.5: Installation

Importation of rootzone may be required. Different ratios will need to be specified for different situations and final use.

Evaluation should take place during the project to ensure any changes required do not impact on the main objective.

Maintain effective working relationships

Ensure health and safety and environmental regulations are adhered to at all times.

Topic 6.6: Initial maintenance to establishment

Understand initial maintenance requirements which may include:

- monitoring for weeds, moss, pests and diseases
- nutrient levels
- protection
- irrigation
- mowing frequencies and reducing height of cut

Unit 24 (LC) Supervise construction of landscape areas

What is this unit about?

This unit includes interpretation of specification, scheduling and quantifying of human resources, materials and equipment. Supervising the installation of landscape features to specified standard.

Landscape feature construction methods should be covered in the level two horticulture & landscape operative apprenticeship training specification. This covers construction of elements e.g. enclosures, surfaces, structures and water features. Free hand cutting and bench cutting of hard landscape materials during construction using abrasive wheels should be covered using a recognised training programme for your industry sector. Service avoidance should be taught using a recognised qualification / training programme for your industry sector.

This is part of the landscape construction specialism.

Learning Outcomes

	Learning Outcomes	Topic
1	Interpreting a specification and planning for the work	1.1) Interpret specification 1.2) Estimate resources required 1.3) Plan resource allocation
	Supervise construction of landscape areas	2.1) Understand impact of Construction Design Management regulations on works Supervise health and safety 2.2) Supervise construction 2.3) Complete work and review

Learning outcome 1: interpreting specification and planning for work

Topic 1.1: interpret specification

Interpret a specification and decide approach to implementation taking into account:

- quality
- cost
- time
- environmental impact
- waste disposal

Topic 1.2: estimate resources required

In line with the specification, estimate the resources required for the work to include:

- materials (including plants)
- tools, equipment and machinery
- staff (numbers, skills and durations)
- external specialist skills (e.g. Arborist, Digger Driver)

Topic 1.3: plan resource allocation

Plan the work identifying what resources are required for each stage of the construction.

Organise / arrange the resources so that they are present when required for the job to progress smoothly and efficiently.

Learning outcome 2: supervise construction of landscaped areas

Topic 2.1: supervise health and safety

Follow health and safety requirements as detailed in the health and safety unit including safety briefings and site induction

Take a dynamic approach to health and safety, adjusting to any changing circumstances and informing relevant personnel of any changing circumstances

Establish a strong health and safety culture on site

Topic 2.2: supervise construction of landscape features

Communicate the specification to the team including standards of work and check understanding.

Ensure work is undertaken within specification.

Supervise works on site including

- environmental good practice
- implementation and observance of Tree Protection Zones
- efficient site lay-out
- traffic management (pedestrians, workers and site vehicles)
- storage of materials, goods and equipment

Adapt to changing conditions or unexpected factors on site if required, including evaluation of site conditions.

Understand and follow company change management processes

- know what changes are within supervisor's responsibility
- know when agreement for changes is required from client / manager and how this should be presented
- know when changes warrant revised scheduling/costs/resources and revise plans accordingly

Supervise team to ensure they work effectively, achieve consistent standards as per the specification, demonstrate appropriate behavior and safe work practices. Give clear directions where required.

Communicate with client and / or management to keep them appraised of progress

Ensure relevant records are kept, including legislative requirements and company procedures.

Ensure environmental good practice is implemented

Topic 2.3: complete work and review

Ensure that work is completed to specification on time, waste disposed of appropriately and site left in suitable condition.

Follow any company procedures for signing off work as complete.

Unit 25 (LC) Supervise the repair of hard landscape features

What is this unit about?

The purpose of this unit is to demonstrate the knowledge, understanding and skills required to maintain and repair hard landscape features.

This is part of the landscape construction role.

Learning outcomes

	Learning Outcomes	Topic
1	Assess hard landscape features for maintenance and repair	1.1) Problems due to lack of maintenance 1.2) Interpret a maintenance specification 1.3) Interpret a works specification in relation to repair or maintenance 1.4) Understand the need to match the original finish or advise the client of deviation of finish
2	Prepare site for maintenance or repair operations	2.1) Arrange for security of the site 2.2) Works required 2.3) Resources required 2.4) Restrictions 2.5) Health and Safety
3	Supervise maintenance or repair operations on hard landscape features	3.1) Monitor materials ordered meet specification 3.2) Supervise work and resources 3.3) Monitor progress and trouble shoot any problems that might arise
4	Quality assure works and hand over to client	4.1) Check quality of work meets specification 4.2) Check site is left safe and all waste and unwanted materials and machinery removed form site

Learning outcome 1: maintain hard landscape features – fences, walls, water and timber

Topic 1.1: problems due to lack of maintenance

Identify problems and explain why boundaries, surfaces and structures must be repaired and maintained and potential problems if not carried out:

- health and safety
- fixtures and fittings

Topic 1.2: interpret a maintenance specification

The requirements of a maintenance specification and prepare accordingly:

- equipment
- resources

Topic 1.3: interpret a works specification in relation to repair or maintenance

Determine the scope of works, staff materials and services required to complete the work
This should take into account:

- staff skills
- health and safety
- public safety
- habitats / wildlife
- sustainable practice and environmental protection
- cost of materials, staff and equipment
- Specialist services (i.e.) electrician, graphics designer, specialist contractor

Topic 1.4: Understand the need to match the original finish or advise the client of deviation of finish

- establish if matching materials are available and if a seamless repair is possible
- consult manufacturers' guidance on repairs as specialist techniques may be required to ensure correct bonding of components.
- where possible minimise the joins between new and old components by planning the overall appearance of the finished job.
- advise the client of any substantial changes to finish.

Learning outcome 2: prepare site for maintenance or repair operations

Topic 2.1: arrange for security of the site

Plan and implement a safe work area around the site, if working on a boundary ensure a temporary enclosure is maintained.

Topic 2.2: works required

Make a detailed inventory of all tasks required and the staff to carry them out. Finalise on a method statement.

Topic 2.3: resources required

Determine machinery, tools, transportation and materials required and waste that needs to be removed

Topic 2.4: restrictions

Establish any restrictions to working on site i.e. contractor's policy. Put a policy in place to conform to these requirements

Topic 2.5: health and safety

Ensure conformity to health and safety legislation and ensure safe working practices and risk assessments are communicated to operatives

Learning outcome 3: supervise maintenance or repair operations on hard landscape features

Topic 3.1: monitor materials ordered meet specification

Check that materials meet the specification agreed with the client this might require origin to be checked as in use of timber products.

Topic 3.2: supervise work and resources

Check that workmanship is to a high standard of skill, manufactures installation guidance or industry standard practice is followed. That work is carried out under suitable weather conditions. Ensure materials are secure from theft and damage. Ensure that waste is correctly disposed of.

Topic 3.3: monitor progress and trouble shoot any problems that might arise

Monitor progress and advise client of any delay in completing the work, if need be reassess resource requirement. Utilise industry knowledge and contacts to resolve any problems encountered, use pragmatic solutions to overcome problems or provide options to the client

Learning outcome 4: quality assure works and hand over to client

Topic 4.1: check quality of work meets specification

Assess the work completed and check that it meets the specification and client's requirements

Topic 4.2: check site is left safe and all waste and unwanted materials and machinery removed form site

Ensure that the site is left in a clean condition with the work fully completed it would be good practice to show the client the work and check they are happy with the final result. Explain if there is any work guaranteed any maintenance instructions and the contact details in case of complaint or fault developing.

Unit 26 Behaviours

What is this unit about?

This section is intended to give additional direction on the behaviours in the standard.

Behaviours

Behaviours	**What is required** (developed and exhibited in the workplace)
Takes responsibility	Drive to achieve in all aspects of work. Demonstrates resilience and accountability. Determination when managing difficult situations. How are these behaviours demonstrated? • getting jobs done on time • takes responsibility • solution focussed • bounces back when things don't go to plan
Inclusive	Open, approachable, authentic, and able to build trust with others. Seeks views of others. How are these behaviours demonstrated? • makes time for others • is approached by others for advice and guidance • includes everyone when carrying out meeting / briefings
Agile	Flexible to the needs of the organisation. Is creative, innovative and enterprising when seeking solutions to business needs. Positive and adaptable, responds well to feedback and need for change. How are these behaviours demonstrated? • embraces change when required • suggests different ways of doing things • comes up with solutions when plans are changed • is a role model with a 'can do attitude'
Professionalism	Sets an example, and is fair, consistent and impartial. Open and honest. Operates within organisational values How are these behaviours demonstrated? • role model for professionalism • gives honest feedback • treats team members fairly • applies policies consistently

Appendix 1: Horticulture / Landscape Supervisor Apprenticeship: Learning Plan

This table is an optional tool to help plan the apprentice's learning both on and off the job. It makes sure that they have experience of the relevant tasks in a highly seasonal occupation. It is recommended that the plan be agreed by the training provider, employer and apprentice. It should be regularly reviewed possibly during employer appraisals and sessions with the training provider. The list of tasks is indicative only and can be adapted to meet the needs of the apprentice's situation.

Key: LC – refers to the Landscape Construction Role; H refers to the Horticulture role. Units can be found in the training specification.

Role	Unit	Example Task	Resources & support required	Target date	Date Completed
Core	2	Supervise a project through the full cycle			
Core	2	Keep records including financial, resource, work progress, legal and staffing			
Core	3	Communicate with others, including team, clients, the public and colleagues			
Core	3	Use basic IT systems when communicating			
Core	4	Support team members to interact with a challenging / dissatisfied customer.			
Core	4	Run a tool box talk explaining the organisations values and expectations when dealing with customers including general principles to adopt and complaints procedures			
Core	5	Implement a change effectively and ensure team members 'buy in' to the change.			
Core	5	Provide support and guidance to a team member facing difficulties with the work role			
Core	5	Carry out an appraisal review on a worker, set objectives and report on performance			
Core	5	Manage team performance, identify strengths and weaknesses in the team, provide leadership to enhance productivity			
Core	6	Create a risk assessment on an activity you are supervising			
Core	7	Develop a site waste plan and record waste transfer notes			
Core	7	Produce an environmental risk assessment, set up protection zone round identified protected species			

Core	7	Set up biosecurity measures to control the spread of invasive species			
Core	8	Plant Growth & Development- 1. Analyse, research and formulate solutions to cultivation problems. Produce an action plan to resolve the issues.			
Core	9	Operate machinery			
Core	9	Run a tool box talk on the use of tools, equipment or machinery			
Core	10	Able to implement a vegetation control plan and instruct staff in cultural and chemical methods			
Core	11	Identify legal identity of plants, registered names and selling names.			
Core	11	Use dichotomous plant identification keys and flora keys to name unidentified plants			
Core	11	When faced with an unidentified species, will be competent in recording information for later identification			
Core	11	Identify a minimum of three hundred (300) plants			
Core	12	Investigate and record characteristics of soils			
Core	12	Supervise soil sampling			
Core	12	Supervise soil cultivation			
Core	12	Supervise soil improvement			
Core	12	Supervise fertiliser application to meet a crop requirement			
Core	12	Identify growing media and the crops they are suitable for			
Core	13	Control pests, diseases and disorders			
Core	13	Run a tool box talk on biosecurity using a real and current threat to a horticultural site			
Core	14	Produce an inventory of protected species for a horticultural site with management controls to protect them from horticultural operations			
Core	14	Produce a management proposal for increasing the biodiversity of a horticultural site. Identify opportunities and threats and develop an action plan.			
Core	14	For a horticultural site develop a style guide to identify existing historic planting and set guidelines for future planting and management.			

Core	15	Develop an operational plan for the routine inspection, assessment, maintenance and repair of landscape boundaries / surfaces/ structures.			
Core	15	Quality assure completed landscape repairs.			
Core	16	Identify common heartwood rotting fungi			
Core	16	Supervise cordoning off a tree to protect the public			
Core	16	Carry out a visual tree assessment and communicate risks if present			
H	17	Supervise management of propagation environment			
H	17	Develop propagation schedules			
H	17	Supervise the production of plant propagules			
H	17	Supervise the sowing of seeds			
H	17	Supervise plant production			
H	19	Supervise staff in pruning and training techniques			
H	19	Supervise the cultivation and maintenance of soft landscape elements			
H	19	Develop maintenance plans for horticultural sites			
H	20	Plan and supervise installation of irrigation systems			
H	20	Plan and supervise routine maintenance, fault finding and repair of irrigation systems			
H	21	Produce a management plan for a turf surface			
H	21	Supervise maintenance activities on winter and summer turf surfaces			
H	21	Carry out a Performance Quality Standard (PQS) assessment			
LC	22	Carry out a site survey and accurately collate site readings			
LC	22	Mark out a horticultural design on a site including shapes and levels			
LC	24	Interpret a work specification and plan a schedule of works			
LC	24	Estimate resources required for a landscape construction job			
LC	24	Supervise construction of landscape features			
LC	24	Quality assure landscape construction for handover to client			
LC	23	Install irrigation systems			
LC	23	Install part of a drainage system			
LC	23	Lay out and plant plants			
LC	23	Set out a landscape construction site from a landscape works plan			

LC	25	maintain hard landscape features			
LC	25	prepare site for maintenance or repair operations			
LC	25	supervise maintenance or repair operations on hard landscape features			

Appendix 2

Horticulture / Landscape Apprenticeship

Apprentice Appraisal Form

This is a resource for employers to use when monitoring the apprentice's progress. It is only a suggestion. It is recommended that appraisals are held as a minimum quarterly, apprentices are given time to prepare off the job and the employer liaises with any external training providers being used.

Apprentice name:	
Appraiser name:	
Appraisal Date:	
Dates of period covered:	
Placement absence - annual leave:	
Placement absence – sickness absence:	

1. Progress against targets from previous review.
Has the apprentice undertaken the tasks set in the previous review? Have they had the opportunity to undertake the learning and skills development identified? Is evidence supplied to an adequate standard? Have they undertaken any training required and if not why not?
2. Knowledge
Has the apprentice undertaken knowledge tests successfully? Is their knowledge developing? Are they undertaking wider study and applying it in their work?
3. Tasks

Was the apprentice able to apply their knowledge and understanding to their tasks and the work of their team? Is this demonstrated through journal entries plus qualifications and practical test undertaken (if any).
4. Behaviour and attitude Are they taking responsibility both for their team's work and their own? Are they inclusive when working with colleagues, staff and others? Are they adapting to any change and finding solutions to problems that arise? Are they professional in their work?

Employer Feedback

Strengths
Areas for improvement

Apprentice feedback

The main things I learned during this period
What I would like to improve, and any challenges to achieving my targets

Appendix 3

Horticulture / Landscape Apprenticeship

Learning Journal

This learning journal is an optional template for use in the apprenticeship. It is recommended that a minimum of 40 tasks and 40 plant profiles are completed during the three-year apprenticeship. This might equate to doing a plant profile and detailed task on alternate weeks.

Apprentice name:	
Line manager name:	
Date:	

Apprentice to provide a bullet list of the main tasks carried out – can be by day or by task as preferred – up to 10 points maximum including tasks supervised
•
Key learning actions achieved, including supervisory skills
Line manager to comment on performance, discuss any errors and suggest improvements
Line manager signature & date

Skills portfolio –

Apprentice to record, research and analyse a horticultural skill, this should preferably be something you have been trained in or have experience of from the list provided. Maximum word count 500	
Skill Title	
Description to include why, how & when task is done.	
Health, safety and environmental awareness considerations	
Supervisory considerations for this task	
Relevant Images	

Plant profile

Study a plant encountered during your work, identify it and take note of the health, maintenance and location. Complete the following. Maximum word count 300	
Family	
Scientific name (including cultivar if applicable)	
Common name	
Health of plant including any problems and actions or investigations required	
Maintenance requirements including current condition, actions required, seasonal considerations etc…	
Suitability of the plant for the location including light, soil, water, design, mature size and other factors e.g. poisonous, spines, specific user requirements etc…	
Image of plant	