

RHS Qualifications

RHS Level 3 Certificate in the Principles of Plant Growth, Garden Planning and Applied Propagation

Qualification Specification

For first teaching September 2023

Qualification number: 610/2231/7

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1. RHS Qualifications Contact Details

RHS Qualifications is the Awarding Organisation of the Royal Horticultural Society.

RHS Qualifications RHS Garden Wisley Woking Surrey GU23 6QB UK Tel: 01483 226500

Email: <u>qualifications@rhs.org.uk</u>

RHS Website: rhs.org.uk/qualifications

2. Equality and Diversity Policy Statement

RHS Qualifications is committed to policies that will promote equal opportunities in all its operations, regardless of age, disability, ethnic origin, gender, marital status, religion, sexual orientation or any other factor.

RHS Qualifications is committed to ensuring that there is no unfair discrimination in any of its operations and will consider all current legislation in relation to the equality of opportunity.

RHS Qualifications will constantly monitor and review its policies and practices pertaining to equal opportunities, to ensure that they remain consistent with its equal opportunities objectives and continue to comply with all relevant legislation. RHS Qualifications will strive to make awareness of and respect for equality and diversity, an integral part of the culture of the organisation. A copy of the RHS Qualifications Equality and Diversity Policy is available on the RHS website.

The privacy, and security of personal data is extremely important to us. Personal information that centres provide is used for the purposes of furthering our legal obligations as an awarding body for creating qualifications and issuing of certificates. For further information and a detailed explanation, please refer to our Privacy Policy on the RHS website (rhs.org.uk/privacy).

3. RHS Level 3 Certificate in the Principles of Plant Growth, Garden Planning and Applied Propagation

Introduction and context

The horticultural industries span many disciplines, from the production of plants for planting through to the production of fruit, salads and vegetables.

An important sector of this industry is the management of gardens and designed landscapes. The horticulturists who work in such settings are involved in the scientific study of plants, the preservation of heritage, the propagation of new plant material, and the pursuit of best practice to inform their management decisions.

The World Health Organisation report *Urban Green Spaces and Health* highlights the importance of such gardens and designed landscapes in the promotion of mental health and wellness.

Put simply people need plants. Plants need horticulturists.

3.1. Audience

The purpose and content of the Level 3 supports specialist / industry-specific pathways informed by the findings of the Ornamental Horticultural Round Table Group (OHRG). It is aimed at those progressing in horticultural roles or having a specialist personal interest in the supervision and development of gardens and landscapes, for example public gardens, botanical gardens, heritage gardens, private gardens, maintenance and landscaping along with community green spaces. This qualification thus meets the needs of the amateur gardeners and professional horticulturists alike.

It also provides learners the opportunity of personal development, including the changing of careers and engagement in their learning and offers an opportunity to develop transferable skills such as problem solving, implementing management plans / programmes, and communication as part of their applied learning.

3.2. Guided Learning Hours (GLH) and Total Qualification Time (TQT)

The Guided Learning Hours (GLH) represent the time that the learner spends learning under the immediate guidance and supervision of a tutor and includes assessment by the tutor, as well as invigilated exams. Guided Learning Hours are always less than total qualification time, as learners are expected to complete a certain amount of study in their own time. The Guided Learning Hours for this qualification is 120.

Total Qualification Time (TQT) includes the Guided Learning Hours and represents the notional time that an average learner could reasonably expect to take to complete the learning outcomes of the units to the standard determined by the assessment criteria, and gain the qualification. It includes all face-to-face contact with tutors as well as assessment time and unsupervised directed study, coursework and practice. The Total Qualification Time for this qualification is 180.

3.3. Teaching Pattern

The qualification is designed to be studied on a part-time basis. No particular teaching pattern is specified, and centres offering courses leading to the qualification are free to define their own teaching structure and teaching hours.

3.4. Qualification Structure

This qualification certificate is divided into two units, each containing four topics. The topic is identified through the use of Unit and Topic codes, as follows:

RHS Level 3 Certificate in the Principles of Plant Growth, Garden Planning and Applied Propagation

	UNIT 1		
Торіс		Elements	
1	Horticultural Heritage	 The history of horticultural space Key influences on the development of horticultural space The importance of horticultural heritage The impact of horticultural heritage on gardens management. 	
2	Plant Knowledge	 The role of exploration on plant diversity Plant information sources Applied plant knowledge Managing plants within botanic and other gardens. 	
3	Plant Selection and Cultivation	 Selecting plants for a purpose Plant procurement Combining plants Planning plant maintenance. 	
4	Plant Propagation	 Propagation facilities Planning propagation Advanced propagation techniques Development of propagation protocols. 	

	UNIT 2		
	Торіс	Elements	
1	Garden Styles and Specialist Areas	 Garden styles and areas Planting styles Hard landscaping elements Management of trees. 	
2	Productive Growing	 Growing systems Selection of crops and planning cropping Optimising yield Research and development in productive growing. 	
3	Gardens Management	 Managing people in a garden Managing material resources in a garden Planning projects and maintenance activities Maintenance standards. 	
4	Gardens, People and Spaces	 Gardens and visitors Gardens and their communities Wellbeing Feedback and evaluation. 	

4. Assessment

4.1. Assessment Outcomes

The content covered in each topic of this syllabus specification is expressed in terms of 'Assessment Outcomes' (AOs).

Assessment Outcomes define the way in which learners demonstrate their abilities under test conditions. The AOs use a 'progressive mastery' model for each topic area. This qualification has three broad categories of assessment outcomes, which are:

AO1 – knowledge recall of scientific ideas, processes, techniques, procedures, and making correct use of terms, symbols and units of measurement

AO2 – application of knowledge and understanding of concepts, theories, facts to different situations and contexts through presentation of reasoned explanations and analysis and interpretation of information and ideas

AO3 – application of knowledge and understanding in an integrated and holistic way in order to reach conclusions and make judgements and recommendations.

The relevant content (elements) for each of these AOs is included against each topic area in the specifications below. It is therefore clear what is to be covered and the nature of how it will be assessed. Each topic will start with knowledge recall (AO1), progress to application of knowledge to situations (AO2), and ultimately to making connections with other relevant topic areas i.e. holistic (AO3). The aim is that those learners who successfully meet all these progressive demands will be able to demonstrate a wide range of skills and especially the ability to apply what they have learned in practical contexts.

4.2. Assessment methods

This qualification will be entirely assessed by a summative, unseen written examination for each unit. Therefore examination 1 will cover Unit 1 (topics 1.1-1.4) and examination 2 will cover Unit 2 (topics 2.1-2.4).

In each examination, all assessment outcomes specified in the unit will be covered. Examinations must be taken with a provider approved by RHS Qualifications, or under arrangements for exceptional supervision agreed by RHS Qualifications.

Examinations must be conducted in accordance with the RHS requirements for the Conduct of Examinations (see <u>rhs.org.uk/qualifications</u> for more details).

4.3. Grading

Both unit examinations carry equal marks. Learners have to achieve at least 50% in each unit and must pass both unit 1 and 2 in order to be awarded the qualification.

A final grade for the overall qualification will be calculated by amalgamating the marks for each unit and expressed as a percentage. Learners will be awarded the following grades for the complete qualification: 50-64% Pass 65-79% Merit 80%+ Distinction

5. Learning Resources

There is a wide range of books, online material and other learning resources published which support the studies of those learning horticulture. RHS Qualifications does not recommend or endorse any specific learning resources as meeting the needs of learners studying for RHS qualifications. Learners are encouraged to seek guidance from their tutors on which learning resources will best support their studies, or to choose the most appropriate resources to support the qualification requirements and their needs from the wealth of material available.

6. Approved Centres

RHS Qualifications can only be delivered by approved centres. Further information regarding the approval process can be found at: <u>rhs.org.uk/qualifications.</u>

7. Learner Registration

All learners must be registered with RHS Qualifications at the commencement of this qualification through the RHS Qualifications Web Portal. More information about the registration process is available from RHS Qualifications.

8. Reasonable Adjustments and Special Consideration

RHS Qualifications is committed to ensuring fair assessment for all learners, and will facilitate access to its qualifications through reasonable adjustments to assessment arrangements for learners with an identified specific need. An example of a reasonable adjustment which could be made is the production of a modified examination paper for a learner with a visual impairment.

Special consideration is given following the examination to learners who are present for the examination but may have been disadvantaged by temporary illness, injury or adverse circumstances which arose at, or near, the time of examination.

Full guidance is provided in the document 'Guidance to Centres for Reasonable Adjustments and Special Consideration'. The document is available on the RHS website (<u>rhs.org.uk/qualifications</u>), the RHS Qualifications Approved Centre web portal, or can be obtained from RHS Qualifications.

Applications for reasonable adjustments or special consideration must be made by the Approved Centre on behalf of the learner. Application must be made within specified timescales.

9. Fees

For a full list of fees please see the RHS Qualifications Fees Notice, this document is available on the Qualifications page on the RHS website and on the RHS web portal. All fees are payable prior to confirmation of entry for any examination.

10. Late Entries

RHS Qualifications publishes annually, and distributes to Approved Providers, the closing dates of entry for each examination for the following year. Entries submitted after the published closing date will be subject to a late entry fee.

11. Enquiry about Results service

An enquiry about results service is available from RHS Qualifications. Applications must be submitted within the specified number of working days of the results release date. Applications received after this date will not be processed. Detailed regulations about this service are available from RHS Qualifications.

12. Re-mark & Feedback

The fee for a remark and feedback can be found on the RHS Qualifications Fees Notice. If a re-mark results in an upgrade of the result, the fee paid will be refunded.

13. Appeals Procedure

An Appeals procedure exists to conduct appeals lodged by learners against decisions made by RHS Qualifications, concerning their examination performance, the granting of an award and/or the closure of their entry to an award on academic grounds.

The procedure is also followed in instances where RHS Qualifications has imposed a penalty on a learner, tutor or invigilator, and where the Centre wishes to appeal against this decision after results are published.

A copy of the procedure is available on the RHS Qualifications web portal and on the RHS website.

14. Replacement Certificate (if lost, damaged or destroyed)

The fee for a replacement certificate can be found on the RHS Qualifications Fees Notice. Requests for a replacement certificate must be sent to the Qualifications Department.

15. Policy on Malpractice and Maladministration

Malpractice consists of those acts which undermine the integrity and validity of any assessment or examination, the certification of qualifications and/or damage the authority of those responsible for conducting the assessment, examination and certification.

RHS Qualifications does not tolerate actions or attempted actions of malpractice by learners or centres in connection with RHS qualifications. RHS Qualifications may impose penalties and/or sanctions on learners or centres where incidents, or attempted incidents, of malpractice have been proven.

A copy of the full policy is available on the RHS Qualifications web portal and on the RHS website.

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Syllabus Specification

The specific detailed content of the syllabus now follows on the following pages. However, learners should have regard to four overarching qualification-wide outcomes:

Qualification-wide outcomes

Health and Safety:

- Knowledge of, and compliance with, current legislation as it relates to horticulture
- The management of risk within horticulture
- The storage, care and maintenance of PPE, tools and equipment in horticultural settings.

Sustainability:

The impact of horticulture on the wider environment, with specific reference to:

- Reduction of the negative impacts of horticultural practices
- The contribution of horticulture to the three pillars of sustainability (economic viability, social equity and environmental protection)
- The concept that horticulture should be net positive, benefitting the wider environment
- The impact of horticulture on climate change
- The impact of climate change on horticulture.

Best Practice:

- Professional approaches and techniques
- Professional use of named plant species in a wide range of horticultural settings
- Horticultural practices which are professional, current, effective and sustainable
- The adoption of trials results, research and development findings.

Equality and diversity:

- Knowledge and compliance with all current legislation as it relates to horticulture
- The concepts of respect, fairness, and dignity
- Negative impacts of poor practice to include: discrimination, victimisation and harassment
- The advantages of inclusive cultures.

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UNIT 1

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Unit:	1
Topic:	1
Title:	Horticultural Heritage

Topic overview

The management of historic gardens and landscapes is a growing sector of horticulture. Those who are tasked with the care of these important spaces make management decisions, balancing the often-competing requirements of being custodians of the past, with the creation of garden areas that meet the needs of today's visitor.

Those working in this developing field require an underpinning knowledge of horticultural history, including the role and purpose of horticultural spaces through time.

The key influences on the development of gardens including politics, exploration and trade, colonialisation and development of empire, and the assimilation of gardening styles from different cultures are all considered.

The value of horticultural heritage to society is considered, including the economic benefits, the role of heritage gardens and designed landscapes in conservation, along with the models and techniques that are used to evaluate these important concepts.

The impact of horticultural heritage on the management of gardens and designed landscapes informs many of the decisions required in the care of these important spaces. This includes aspects such as statements of significance, prioritisation of works and spirit of place.

Element 1 The history of horticultural space			
AO1: Knowledge	AO2: Application	AO3: Integration	
The role and purpose of horticultural spaces through history, from the 14 th to the 21 st Centuries, to include: public spaces conservation collections private gardens urban green space.	 Key criteria for garden research to establish period and style, to include: sources of information establishing context interrelationship with the wider landscape history philosophies plant introductions garden design. 	The impact and importance of exploration and plant introductions on horticultural heritage.	
Commentary			

AO1 considers the role and purpose of horticultural spaces, from the 14th Century to the present day. Learners develop a knowledge of the role and purpose of public spaces, conservation collections, private gardens and urban green spaces.

At AO2 learners apply this knowledge by moving on to consider garden research to enable them to establish period and style.

At AO3 the impact and importance of exploration and plant introductions is considered.

Element 2 Key influences on the development of horticultural space			
AO1: Knowledge	AO2: Application	AO3: Integration	
Key influences on the development of horticultural spaces, to include: • politics, society and common values	Impact of key influences on garden style. The identification of garden style through the use of planting and design characteristics.	The importance of communities of practice, the role of specialist societies, the sharing of information and approaches.	
exploration and trade			
 colonialisation and the development of empire the assimilation of gardening styles from different cultures 			
 evolving concepts of the garden through the centuries 			
• religion and philosophy			
 art and architectural styles. 			
Commentary			
Gardens are reflections of the era in which they were designed and created, their development			

Gardens are reflections of the era in which they were designed and created, their development through time has been influenced by politics, exploration and colonialisation. These and other influences are considered in AO1.

The gardens that result from the influences explored in AO1 are identified within AO2 through their use of plantings and their design characteristics.

The process identified at AO2 is strengthened and enhanced in AO3 through the use of communities of practice, the sharing of information and approaches.

Element 3 The importance of horticultural heritage			
AO1: Know	vledge	AO2: Application	AO3: Integration
The value of horticultural heritage to society, to include: economic benefit conservation national identity community		Techniques to evaluate heritage on a site.	The role of interpretation in engaging visitors.
Commentary			
The wide-ranging positive contributions of horticultural heritage are considered at AO1, with AO2 developing the key criteria that can be used to evaluate the contribution of heritage within gardens and the designed landscape. AO3 introduces the wider usage of interpretation within horticultural settings			

	Element 4 The impact of horticultural heritage on gardens management				
	AO1: Know	ledge	AO2: Application	AO3: Integration	
Conservation theory (as applied to horticultural spaces), to include: significance the prioritisation of works spirit of place the legislative framework. The purpose of conservation management plans for horticultural spaces.		on theory (as orticultural include: ance ritisation of works place slative framework. e of conservation at plans for spaces.	The interpretation of conservation management plans for horticultural spaces.	The importance of heritage in the setting of management standards within gardens.	
	Commentary				
	At AO1 the basic concepts found within conservation theory are established along with the purpose of conservation management plans which are within the public domain. At AO2 learners apply this knowledge in the purpose and interpretation of management plans.				
	At AO3 the importance of heritage is considered within the setting of management standards.				

Unit:	1
Topic:	2
Title:	Plant Knowledge

Topic overview

The plants that are cultivated within both historic gardens and landscapes, and those used within wider green spaces, are the result of exploration and plant collecting. It is important that horticulturists understand the process of plant introductions. This includes historical contexts, along with the introduction of plant material that is being wild collected through current exploration.

The horticulturist who is engaged in the management of these living collections is often involved in researching various topics to inform plant husbandry. This research involves developing skills relating to the use of reliable information sources, along with a knowledge of international standards of plant nomenclature. Areas of research include; origin and natural habitat, folklore and use in medicine, biodiversity ratings and conservation status. This information is applied in the selection of species, in the management of living collections and horticultural interpretation.

The management of living collections involves the management of data, and the use of plant records to collate data and inform future management decisions.

Element 1 The role of exploration on plant diversity				
AO1: Knowledge	AO2: Application	AO3: Integration		
The process of plant introductions to British gardens from the 16 th to the 21 st Centuries.	The advantages of wild collected plant material with regard to resilience, genetic diversity and conservation.	The impact of exploration and plant introductions on horticultural heritage.		
The impact of plant exploration and introductions on:	The regulation and ethical implications on the collection of plant material from the wild e.g. Convention on Biological			
 world populations of people 	Diversity, Convention on International Trade in Endangered Species			
 world populations of plants 	(CITES). The impact of wild collection			
• gardens in Britain.	on biodiversity.			
Commentary				

AO1 allows the learner to study the process of plant introductions, along with their impact on the world and on gardens.

AO2 considers horticultural practices today including the regulation and ethical considerations of wild collection.

AO3 moves on to consider the impacts of exploration, and the introduction of new plant material on horticultural heritage. This includes the concept that new plant introductions contributed to the development of style within gardens. These gardens are now often considered to be heritage sites. The concept and the argument that when undergoing development work, the palette of plants should be based around plants of the period. Qualification-wide outcomes, for example sustainability and the changing climate can be applied to offer opposing concepts to determine plant selection strategies.

Element 2	Element 2 Plant information sources			
AO1: Know	vledge	AO2: Application	AO3: Integration	
AO1: Knowledge Reliable sources of information about plants to include experience-based and academic sources of information. The range of organisations involved in researching, curating and disseminating information relating to plants. The role of nomenclature standards and type specimens in plant taxonomy		The importance of RHS Plant Finder and the International Plant Names Index when researching plant names. Methodology to describe the properties of plants, to include: • trials and research • ecosystem services • hardiness ratings • colour charts • award schemes e.g. Award of Garden Merit.	The use of reliable information sources in the development of best practice in the management of plant collections and gardens.	
Commentary				
Horticulture is a science requiring reliable sources of information to inform and to develop horticultural practices. AO1 introduces learners to a range of information sources and considers horticultural research and the dissemination of findings.				

AO2 applies the concept of reliable information sources to cover the naming of plants, and standard systems to describe the properties of plants. The use of standard systems to identify climate resilience, drought tolerance and ecosystem services.

At AO3 the use of reliable information sources in the development of best practice is considered. Qualification-wide outcomes applicable to AO3 could include the use of tools to identify climatic conditions in the future to inform plant based decisions.

Horticulturists require the ability to develop and increase their plant knowledge during their careers, or as their passion for a particular group of plants grows. At AO1 the concept of using reliable information sources to research plant information is studied along with the advantages that the use of scientific plant names afford.

At AO2 the application of plant knowledge is considered within the context of the management of National Plant Collections and in the selection and management of plant species. Areas such as botanical plant descriptions are included to allow learners to develop a basic knowledge of the concept of keys, and the ability to provide accurate plant descriptions.

At AO3 the impact of reliable plant-based knowledge is considered on the propagation of plant species or the horticultural techniques used in the management of gardens. Qualification-wide outcomes that can be applied in AO3 include the application of plant knowledge with reference to sustainability and climate resilience.

Element 4 Managing plants within botanic and other gardens		
	AO2: Application	AO3: Integration
ng	The advantages and limitations of plant records.	The value of plant and historical records.
its of plant	The use of digital tools / apps to manage plant records.	Methods and importance of sharing plant record information with others in
ntained S.		professional bodies e.g. Botanic Gardens Conservation International, National Plant Collections (Plant Heritage).
Commentary		
	ying plants v ng its of plant ntained S.	ging plants within botanic and other gardens AO2: Application ng The advantages and limitations of plant records. its of plant The use of digital tools / apps to manage plant records. ntained S.

Many gardens and designed landscapes keep records of their plant collections. The more formal the collection the more detailed such records are. AO1 explains the concept of plant records along with the information they contain.

This is applied at AO2 through the study of the advantages and limitations of plant records along with the use of digital tools and apps in the management of living collections.

At AO3 the value of plant and historical records in the management of gardens and designed landscapes is considered. The networks through which such information is shared are also considered.

Unit:	1
Topic:	3
Title:	Plant Selection and Cultivation

Topic overview

The selection and cultivation of plants within gardens and designed landscapes is the point at which design, artistic flair and creativity meets horticultural science.

The selection of plants starts with considering the function or role they will play within the garden. The specification of plant material is critical to the ultimate quality of plantings. The horticulturist needs to be able to use technical language and apply a range of criteria to inform the specification of plants for planting.

The combination of plants to create gardens and designed landscapes involves the study of plant-based design principles.

Finally, the unit considers the important topic of the selection of plant species to fulfil a function within a garden or designed landscape. This includes the specification of plant material and the combination of such plants to create a garden. These specifications have significant practical implications on the management and the calculation of labour requirements in a garden.

Element 1 Selecting plants for	or a purpose	
AO1: Knowledge	AO2: Application	AO3: Integration
Characteristics of plants for a range of purposes, to include: • structural • productive • climate resilience • ecosystem services • focal points • aesthetics • specialist / themed areas.	 Select plants for a range of purposes, to include: structural productive climate resilience ecosystem services focal points aesthetics specialist / themed areas. 	Plant selection considerations for heritage sites e.g. suitability to era, historic links to site.
Commentary		

AO1 allows learners to further their plant knowledge by considering the characteristics of plants to meet a range of roles within gardens and designed landscapes. The role of plant selection in biodiversity, with particular regard to ecosystem services, which include the provision of habitat and food along with other relevant criteria.

This knowledge is applied at AO2 where learners select plants suitable for a range of purposes.

At AO3 the suitability of plant selection to the heritage of the site are considered along with the application of the syllabus-wide outcomes.

Element 2 Plant procurement		
AO1: Knowledge	AO2: Application	AO3: Integration
Terminology used in the specification of plants for planting. Tree sizes, to include:	The impact of site-based requirements on the specification of plants for planting. Tree sizes, to include:	The importance of best practice and fact-based decision making when specifying plants for planting.
 unfeathered maiden (whip) feathered maiden standard heavy standard. Production systems, to include: bare root rootball undercut airpots containerised container grown. Sustainability, to include: locally grown, reduced emissions in transport single use plastic peat free growing media water footprint ethics e.g. Modern Slavery 	 unfeathered maiden (whip) feathered maiden standard heavy standard. Production systems, to include: bare root rootball undercut airpots container grown. Sustainability, to include: locally grown, reduced emissions in transport single use plastic peat free growing media water footprint 	
Act. Biosecurity, to include:	ethics e.g. Modern Slavery Act.	
 policies supplier reputation compliance with phytosanitary controls / legislation. 	 Biosecurity, to include: policies supplier reputation compliance with phytosanitary controls / 	
Procurement, to include:	legislation.	
 lead times/delivery local production minimum order quantities. 		
Formal standards to include the concept of British Standards Commentary		
At AO1 learners study the terminology that is used in plant specifications.		

At AO2 learners apply these principles.

At AO3 the importance of research, the application of best practice and fact-based decision making is considered in plant specification.

Element 3 Combining plants	;	
AO1: Knowledge	AO2: Application	AO3: Integration
The impact of design principles on the combination of plant species, to include: texture proportion scale colour unity harmony balance rhythm repetition.	The application of design principles in the work of prominent designers e.g. Piet Oudolf, Gertrude Jekyll.	The impacts of heritage on design.
Commentary		

At AO1 learners consider the impact of a series of design principles that inform the combination of plants.

At AO2 the work of leading plant-based designers is considered to further inform this process.

At AO3 allows learners to integrate this knowledge to the syllabus-wide outcomes and plantbased design.

Element 4 Planning plant ma	Planning plant maintenance		
AO1: Knowledge	AO2: Application	AO3: Integration	
The cultivation requirements of a range of plants.	The impact of cultivation requirements on staff resources and the development of maintenance schedules.	The importance of best practice and fact-based decision making when developing maintenance schedules.	
Commentary			

At AO1 the cultivation requirements of a range of plants are considered.

At AO2 learners consider the implications of plant selection on maintenance requirements and staffing, through the development of maintenance schedules.

At AO3 the importance of fact-based decisions in the development of maintenance schedules is applied.

Unit:	1
Topic:	4
Title:	Managing Plant Propagation

Topic overview

As part of their management of gardens and designed landscapes, horticulturists are called upon to propagate a wide range of plants. Such plants may be for planting schemes, heritage assets, plant collections or simply to produce stock for plant sales.

The propagation of plants starts with the selection of appropriate facilities laid out in a manner which allows effective working practices.

To maximise investment, propagation facilities should be fully utilised, which involves the planning of operations to meet the needs of the plant species and available space.

Many plant species require specialist propagation techniques that apply scientific knowledge to horticultural practice.

Horticultural research and development is constantly improving our understanding of plant propagation. Horticulturists must access and apply this knowledge through regular updating from trusted organisations.

At AO1 learners review the essential components of a propagation facility.

At AO2 the factors to consider when selecting equipment to develop a propagation facility are considered. Learners also consider the layout of a facility, to include efficiency of working practices.

At AO3 the impacts of plant species to be propagated is considered along with the importance and use of horticultural research findings when developing a propagation facility.

Element 2 Planning propaga	tion	
AO1: Knowledge	AO2: Application	AO3: Integration
Components of annual propagation plans, to include: stock plant management capacity timings of operations germination times rooting times resource requirements labour requirements techniques to be used pest and disease control and hygiene.	Create an annual propagation plan, to include: • stock plant management • capacity • timings of operations • germination times • rooting times • resource requirements • labour requirements • techniques to be used • pest and disease control and hygiene.	The role of the propagation facility in meeting plant procurement requirements. The role of the propagation facility in the production of hard to source heritage-based plant material.
Commentary		

AO1 specifies the key criteria to be used in the development of propagation plans.

AO2 applies these criteria as learners produce annual propagation plans to maximise the use of a small propagation facility.

AO3 integrates the role of a propagation facility to other topic areas, for example the role of propagation facilities in meeting plant procurement requirements, or in the production of heritage-based plant material. Qualification-wide outcomes, including sustainability are applied within AO3.

Element 3 Advanced propagation techniques		
AO1: Knowledge	AO2: Application	AO3: Integration
Advanced seed propagation to include techniques to overcome dormancy mechanisms, to include: scarification vernalisation gibberellin soaks.	The impact of the following factors when propagating plant material: growing media modules rooting treatments nutrition temperature relative humidity.	The use of propagation protocols to reliably produce plants that require specialist techniques.
Specialist vegetative propagation techniques relevant to the management of plant collections.		
Advantages of:		
 clonal selection micropropagation.		
Commentary		
At AO1 learners further their knowledge of plant propagation by considering the specialist techniques used to overcome seed dormancy. Other areas of consideration include: seed collection, layering, bulb and corm propagation, grafting and other associated techniques.		

At AO2 the impact of a number of factors on the management of the propagation process, (to include seed and vegetative) are considered.

This concept is furthered at AO3 with a deeper analysis of the impact of plant requirements being considered.

Element 4 Development of	4 Development of propagation protocols		
AO1: Knowledge	AO2: Application	AO3: Integration	
 The value of protocols in propagation. The factors that inform the development of protocols. The use of data to measure effectiveness of protocols. The measurement of outcomes, to include: percentage germination percentage rooting. 	Develop propagation protocols.	Role of fact-based decision- making and best practice e.g. through the work of professional bodies.	
Commentary			

At AO1 learners consider the management of a propagation facility, identifying key criteria and key performance indicator (KPI) measures.

AO2 allows learners to develop protocols for the propagation of different genera.

AO3 allows learners to apply fact-based decisions to the process, through reference to the work of professional bodies, such as the International Plant Propagator's Society. The role of communities of practice and the sharing of best practice through conferences and symposia are also considered.

RHS Level 3 Certificate in the Principles of Plant Growth, Garden Planning and Applied Propagation

UNIT 2

Topic Elements		Elements
1	Garden Styles and Specialist Areas	 Garden styles and areas Planting styles Hard landscaping elements Management of trees.
2	Productive Growing	 Growing systems Selection of crops and planning cropping Optimising yield Research and development in productive growing.
3	Gardens Management	 Managing people in a garden Managing material resources in a garden Planning projects and maintenance activities Maintenance standards.
4	Gardens, People and Spaces	 Gardens and visitors Gardens and their communities Wellbeing Feedback and evaluation.

Qualification-wide outcomes

Health and Safety:

- Knowledge of, and compliance with, current legislation as it relates to horticulture
- The management of risk within horticulture
- The storage, care and maintenance of PPE, tools and equipment in horticultural settings.

Sustainability:

The impact of horticulture on the wider environment, with specific reference to:

- Reduction of the negative impacts of horticultural practices
- The contribution of horticulture to the three pillars of sustainability (economic viability, social equity and environmental protection)
- The concept that horticulture should be net positive, benefitting the wider environment
- The impact of horticulture on climate change
- The impact of climate change on horticulture.

Best Practice:

- Professional approaches and techniques
- Professional use of named plant species in a wide range of horticultural settings
- Horticultural practices which are professional, current, effective and sustainable
- The adoption of trials results, research and development findings.

Equality and diversity:

- Knowledge and compliance with all current legislation as it relates to horticulture
- The concepts of respect, fairness, and dignity
- Negative impacts of poor practice to include: discrimination, victimisation and harassment
- The advantages of inclusive cultures.

Unit:	2
Topic:	1
Title:	Garden Styles and Specialist Areas

Topic overview

Gardens and designed landscapes are the result of design and planting decisions, the selection of hard landscaping materials and the dominant forms of trees.

The horticulturist has to be able to determine and work with a number of different design styles, from ecological to modernist, from woodland to rock gardens.

These garden styles are created in part by the selection and style of plantings. The gardens created can benefit the wildlife and biodiversity, along with the mental health and wellbeing of garden visitors.

Hard landscaping materials, including paths, benches and plant supports, contribute to the design style and planting to create ambience.

Trees are often a strong feature in gardens due to their size and longevity. They fundamentally influence style whilst providing a range of functions for both the environment and visitors.

Element 1 Garden styles and areas			
AO1: Knowledge	AO2: Application	AO3: Integration	
Design criteria for a range of garden styles and areas, to include: • formal gardens • woodland gardens • cottage gardens • modernist gardens • coastal gardens • prairie gardens • ecological gardens • alpine and rock gardens • water gardens • display glasshouses.	Identify the following garden styles and areas: • formal gardens • woodland gardens • cottage gardens • modernist gardens • coastal gardens • prairie gardens • ecological gardens • alpine and rock gardens • water gardens • display glasshouses.	The impact of garden styles on visitors, maintenance schedules and garden management plans. The impact of a changing climate on a range of garden styles.	
Commentary			

At AO1 the design criteria for a range of garden styles and features are determined.

At AO2 the design criteria from AO1 are used to identify a range of garden styles.

At AO3 the wider impacts of garden styles on visitors and on the management of gardens are considered along with the impact of climate change on a range of garden styles. This can include plant selection, but also resilience to wind, drought, floods and high temperatures.

Element 2 Planting styles			
AO1: Knowledge	AO2: Application	AO3: Integration	
 Planting styles, to include: formal gardens woodland gardens cottage gardens modernist gardens coastal gardens prairie plantings ecological plantings alpine and rock gardens water gardens display glasshouses. 	Specify suitable plant species for a range of garden styles and areas to include: formal gardens woodland gardens cottage gardens modernist gardens coastal gardens prairie plantings ecological plantings alpine and rock gardens water gardens display glasshouses. The benefits of a range of planting styles and areas on wellbeing and biodiversity.	The impact of planting styles on the development of maintenance schedules and garden management plans. The impact of a changing climate on a range of planting styles.	
Commentary			

At AO1 a wide range of planting styles are investigated.

AO2 allows learners to match plant species to garden styles.

AO3 integrates this area with garden management to consider the impacts of planting styles on garden maintenance, along with the impact of climate change on a range of garden styles. This can include resilience to wind, drought, floods and high temperatures.

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Element 3 Hard landscaping	elements	
AO1: Knowledge	AO2: Application	AO3: Integration
Hard landscaping characteristics for a range of garden styles and areas, to include: • formal gardens • woodland gardens • cottage gardens • modernist gardens • coastal gardens • ecological gardens • alpine and rock gardens • water gardens • display glasshouses.	Sustainable implications of hard landscape material choices e.g. procurement decisions, use of repurposed / recycled materials.	The impact of hard landscaping features on visitor flow e.g. directing and restricting movement.
Commentary		

At AO1 the hard landscaping characteristics for a range of garden styles are considered.

At AO2 the implications of hard landscapes on sustainability are considered, along with procurement decisions and the benefits and limitations of recycled and repurposed materials being considered.

At AO3 wider implications are considered, including the impact of hard landscaping features on the flow of people through the garden.

Element 4 Management of tr	ees	
AO1: Knowledge	AO2: Application	AO3: Integration
The role of trees within a range of garden styles and areas, to include:	The influence of garden styles and areas on tree maintenance, to include:	The impacts of trees on neighbouring garden areas, such as productive growing areas.
 formal gardens woodland gardens cottage gardens modernist gardens coastal gardens ecological alpine and rock gardens. 	 inspection pruning crown raising pest, disease and pathogen legislation. 	The impacts of trees on garden visitors e.g. the provision of shade, the filtering of rain.
Commentary		

AO1 considers the role of trees within a range of garden styles.

The key considerations regarding the management of trees within a garden are considered at AO2.

At AO3 the wider, and sometimes unintended impacts of trees on neighbouring garden areas are considered.

Please note: the qualification-wide outcome with regard to best practice and the naming of plant species is particularly relevant in this element.

Unit:	2
Topic:	2
Title:	Productive Growing

Topic overview

Productive growing within a garden setting involves the cultivation of fruit, vegetables and flowers for cutting. These areas often inspire visitors, and demonstrate sustainable food production strategies that allow members of the public to produce fruit, vegetables and flowers, which have zero food miles and a reduced carbon footprint.

Productive growing involves careful planning and scheduling of crops for continuity of supply. It also involves the selection and implementation of cropping systems and approaches.

Successful productive growing includes a number of key elements, for example, optimising soil fertility, the management of weeds and other unwanted plants, along with the application of best practice and sustainability.

A further aspect of productive growing is the application of the latest findings from horticultural research and development. This research informs the selection of crops, cultivars, and husbandry decisions.

Element 1 Growing systems		
AO1: Knowledge	AO2: Application	AO3: Integration
 The range of systems used in productive growing, to include: certified organic production hydroponics aquaponics minimal cultivation raised beds traditional gardening square foot gardening. 	 The advantages and disadvantages of the following growing systems: certified organic production minimal cultivation raised beds traditional gardening square foot gardening. 	The integration of growing systems into the wider management of garden areas. The role and impact of productive gardens in inspiring garden visitors to cultivate their own gardens.
Commentary		

At AO1 learners are introduced to the range of productive growing systems that are used in gardens and designed landscapes.

At AO2 the advantages and disadvantages of a range of growing systems are evaluated.

At AO3 this element is integrated into other topic areas to consider the integration of growing systems within the maintenance of other garden areas, along with the role of productive gardens in inspiring garden visitors to produce their own crops.

Element 2 Selection of crops	Selection of crops and planning cropping		
AO1: Knowledge	AO2: Application	AO3: Integration	
Criteria for the selection of crops to be grown to include cultivar selection. Factors when planning a cropping schedule for a productive garden, to include: space available crop rotations continuity of supply Gantt charts. The impact of perennial crops on space availability and the efficacy of crop rotations. The use of protective structures e.g. cloches or fleece, for early and late cropping.	Plan the cropping schedule for a small productive growing area / allotment to meet objectives e.g. continuity of supply, crop rotation.	The impact of crop selection on community and visitor engagement. The role of volunteer gardeners in the production of crops. The setting of horticultural standards for productive growing settings.	
Commentary			

At AO1 learners consider criteria for selection of a range of crops to be grown, while also studying a range of criteria used in the planning of productive growing setting.

At AO2 learners apply this knowledge in the production of a cropping schedule for an allotment or small productive garden to include a range of factors, for example the continuity of cropping and crop rotation.

At AO3 this element integrates with other topic areas, for example the impact of crop selection on the diversity of visitors, the role of volunteer gardeners in the production of crops, the setting of standards for productive growing settings

Element 3 Optimising yield		
AO1: Knowledge	AO2: Application	AO3: Integration
Soil amelioration to optimise yield. Weed control strategies to optimise yield. Emerging weed control strategies e.g. hot foam. Implication of control measure on sustainability. The impacts of sowing / planting densities / intercropping on maintenance and yield. Irrigation strategies to optimise yield.	The advantages and limitations of different techniques to increase soil fertility. The suitability of different weed control strategies for a range of ephemeral, annual and perennial weeds. The impact of sowing / planting density / intercropping on crop yield.	The application of soil improvement and weed control strategies in the development of maintenance schedules and garden management plans for other garden areas.
Commentary		

At AO1 learners consider the strategies that can be used to optimise yield.

At AO2 learners evaluate techniques to improve soil fertility and control weeds along with the impact of crop spacing on yield.

At AO3 learners integrate their knowledge of soil improvement and weed control into the wider management of garden areas.

Element 4	lement 4 Research and development in productive growing			
AO1: Know	ledge	AO2: Application	AO3: Integration	
Sources of information growing.	research and on productive	The application of horticultural research in informing crop selection and cultivation practices.	The importance of horticultural research and development to inform the development of garden areas along with the production of maintenance plans and schedules.	
Commentary				
At AO1 learners review the sources of information relating to horticultural research and development.				

At AO2 learners evaluate the findings of horticultural research and development to inform crop selection and the development of cultivation practices.

At AO3 learners consider the importance of the findings of horticultural research and development on wider garden maintenance schedules and plans.

Unit:

Topic: 3

2

Title: Gardens Management

Topic overview

Gardens need to be maintained and managed.

The role of the supervising horticulturist is ultimately to ensure that this maintenance is carried out in an appropriate and sustainable manner. This process includes the recruitment, induction and training of staff, the development of maintenance schedules and the management of health and safety.

Gardens are ever evolving, and so the horticulturist is also engaged in devising, implementing and managing projects within gardens.

Horticulturists, as part of their role set standards, and use IT to develop and implement maintenance schedules and garden management plans. These are useful tools in the setting of clear objectives, project delivery and the management of gardens and designed landscapes.

Element 1 Managing people	in a garden	
AO1: Knowledge	AO2: Application	AO3: Integration
The principles of managing people, to include: recruitment induction clear job roles communication delegation motivation feedback training evaluating performance. Sources of information and guidance e.g. Advisory, Conciliation and Arbitration Service (ACAS).	The practice of managing people, to include: recruitment induction clear job roles communication delegation motivation feedback training evaluating performance. The role of organisational policies, procedures and standard operating policies when managing people.	The impact of managing people effectively on the development of garden areas, maintenance standards and visitor interactions.
Commentary	1	

At AO1 learners are introduced to the principles of managing people, sources of information and guidance.

At AO2 these principles are applied to allow learners to further develop their understanding.

At AO3 the impacts of the effective management of people are considered on the maintenance and development of garden areas, on garden maintenance and on visitor interactions.

Element 2 Managing materia	I resources in a garden	
AO1: Knowledge	AO2: Application	AO3: Integration
Types of material resources within a garden, to include: Built environment, to include: • buildings • paths • mains services. Tools and equipment, to include: • hand tools • powered tools • machinery • IT.	Effective resource management e.g. maintenance plans / schedules and information management.	The implications of poor resource management on the maintenance of garden areas. The role of garden management plans to identify, allocate and justify additional resources.
Commentary		

At AO1 the management of wider garden resources are considered. These material resources include buildings, tools and equipment.

At AO2 the techniques that are used to effectively manage these resources are considered, for example maintenance plans and schedules, along with the role of IT in information management, for example sharing user manuals, operating procedures and maintenance regimes.

The implications of poor resource management on the maintenance of garden areas are considered at AO3.

Element 3 Planning projects and maintenance activities			
AO1: Knowledge	AO2: Application	AO3: Integration	
The concept of project management. The main stages of a project. The role and purpose of project management tools in the maintenance and development of horticultural sites. The role of owners, stakeholders and professionals in the development of a horticultural site, to include: permissions approvals workflows budgets specifications professional boundaries definitions conflict resolution. Setting project objectives, to include: purpose and scope of works the costs and the benefits.	 Key components of maintenance schedules, to include: objectives frequency technique timings. Key components of garden management plans, to include: site objectives history and significance site survey results audience and visitor management project delivery / operational plans records of plant collections. 	The role of garden management plans is setting and ensuring the maintenance standards for a range of garden styles and areas.	
Commentary			
Garden managers use a number of tools to aid in project planning.			
AO1 considers the concept of a project, the main stages of a project, the role and purpose of project management tools, the setting of objectives, and the role of owners and other stakeholders in the development of horticultural sites.			
AO2 allows learners to formally consider the concept of maintenance schedules and garden management plans, which has been referenced in other topic areas.			

AO3 considers the role of garden management plans in other topic areas, for example the production of maintenance plans for non-specialist garden areas.

Element 4	Maintenance standards		
AO1: Know	ledge	AO2: Application	AO3: Integration
The concep managers s standards w Managemer	t of garden etting their own vithin Garden nt Plans.	The impact of standards and specifications on the development of garden management plans.	The role of visitor feedback in the setting and monitoring of standards.
The concep managers w standards d function, de expectations	t that garden vill set differing epending on sign and client s.	The checks that are made to ensure formal quality standards have been met, and that method statements have been applied.	
The concep statements.	t of method	The benefits of benchmarking.	
The concep standards e specificatior Standards I	t of formal quality .g. contract ns, British nstitute.		
The concep standards a without the contracts.	t of working to nd specifications need for formal		
The concep benchmarki gardens	t of ng with other		
Commenta	rv		1

Garden managers are involved in the setting and monitoring of standards. These can be informal to inform maintenance regimes, or more formal when dealing with external suppliers. This concept is introduced at AO1.

AO2 considers the impact that standards and specifications have on the development of garden management plans, for example mowing frequency, permissible extension growth on hedges. AO2 also considers the checks and audits that can be made to ensure works comply to both informal and formal quality standards.

AO3 considers the role of visitor feedback in the setting and monitoring of standards.

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Topic:

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4

Title: Gardens, People and Spaces

Topic overview

Gardens that are visitor attractions are judged on the quality of their pre-arrival information, the arrival experience, the experience of wandering through plantings and garden areas, the customer care offered by team members along with the quality, range and diversity of events and exhibitions.

Horticulturists who manage gardens often work on a variety of projects to engage their communities within the garden under their care, such engagement can involve communities adopting areas of gardens and volunteering and the development of school gardens.

Gardens and gardening have also been shown to have major impacts on wellbeing. The role of gardens as places of nature-based therapy is another area which horticulturists embrace.

Garden managers must also continuously drive standards and improve their offer, often using feedback from a range of stakeholders to inform this process.

Element 1 Gardens and visitors			
AO1: Know	/ledge	AO2: Application	AO3: Integration
Key aspects experience, pre-visi arrival e visitor fl garden custom garden exhibitio quality	s of the visitor to include: t information experience low through the er care events and ons of the experience.	 Criteria to ensure the effectiveness of: pre-visit information arrival experience visitor flow through the garden customer care garden events and exhibitions quality of the experience. 	 The identification of the key factors that create exceptional visitor experiences to include: spirit of place cohesion engagement mission and shared values.
Commentary			
At AO1 learners consider the key aspects of the visitor experience, before considering the effectiveness of these aspects at AO2. AO3 explores a wider range of factors that together create a significant impact on the visitor experience.			

Element 2 Gardens and their communities			
AO1: Knowledge	AO2: Application	AO3: Integration	
 The benefits of community engagement, to include: greater range of perspectives shared ownership improved outcomes 	Techniques to engage with local communities with gardens, to include: consultations events community groups community spaces social media inclusion and diversity.	The value of community engagement in the development of garden management plans and specialist areas.	
Commentary			

At AO1 the concept that gardens can be at the heart of their local communities is introduced, with learners investigating a range of engagement tools.

At AO2 the benefits of community engagement are considered.

At AO3 this element integrates with other topic areas to consider the impact that community engagement can have on the development of garden management plans.

Element 3 Wellbeing			
AO1: Knowledge	AO2: Application	AO3: Integration	
 The impacts of green space on wellbeing, to include: reduced morbidity psychological relaxation stress alleviation physical activity noise and pollution reduction. 	 Range of horticultural interventions to enhance wellbeing e.g. social prescribing, horticultural therapy. The benefits of horticultural interventions on wellbeing, to include: improved concentration mental stimulation increased self esteem healthy patterns of social functioning fitness improved motor skills. 	 The design and development of garden spaces to promote health and wellbeing, to include: specialist areas, e.g. sensory gardens the role of volunteering social inclusion. 	
Commentary		1	
At AO1 the impacts of green spaces on wellbeing are introduced.			

AO2 builds on this knowledge by first considering the range of horticultural interventions to enhance wellbeing before moving on to consider the benefits such horticultural interventions can have on wellbeing.

At AO3, the impacts of wellbeing on the design and maintenance of garden areas integrates this element with other topic areas.

Element 4 Feedback and evaluation			
AO1: Knowledge	AO2: Application	AO3: Integration	
The concept and importance of feedback from staff, volunteers, garden users and stakeholders. Formal and informal sources of feedback. Implementing feedback. Communication with stakeholders.	Techniques to collect feedback from visitors and stakeholders. The value of benchmarking data.	The use of feedback to inform the maintenance and development of the garden.	
Commentary			

At AO1 the concept and importance of feedback from a wide range of stakeholders is considered along with formal and informal sources of feedback, including online reviews, blogs and websites.

At AO2 the techniques for collecting feedback are considered, along with the advantages of benchmarking data to include visitor feedback, or metrics from other gardens.

At AO3 the role of feedback to inform the maintenance and development of a garden is considered, thus integrating this element with other topic areas.