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## RHS Qualifications

# RHS Level 2 Certificate in the Principles of Garden Planning, Establishment and Maintenance

Qualification Specification September 2016

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## 1. RHS Qualifications Contact Details

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

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RHS Website: [rhs.org.uk/qualifications](http://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 take into account 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.

### **3. RHS Level 2 Certificate in the Principles of Garden Planning, Establishment and Maintenance**

#### **3.1 Introduction**

This qualification provides a route to employment in professional horticulture by assessing knowledge of the principles underpinning horticultural practices, and supports career development for those already working in the profession. It also provides a foundation for further learning or training in the field of horticulture.

There are no pre-requisites for entry to the qualification.

The qualification is on the Register of Regulated Qualifications.

Qualification Number:500/8295/4

#### **3.2 Credit Value**

The qualification has a credit value of 14.

This equates to 140 learning hours. Learning time is defined as the time taken by learners at the level of the qualification, on average, to complete the learning outcomes of the units to the standard determined by the assessment criteria.

Guided Learning Hours (GLH) are the number of hours of face-to-face tutor contact recommended to complete the qualification. Guided Learning Hours are always less than the total learning hours, as learners are expected to complete a certain amount of study in their own time. The Guided Learning Hours for the qualification are 107 hours.

#### **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

The qualification will be awarded to those who gain the credits for the following four mandatory units:

RHS Ref	Unit	Credits	Level
R2111	Understanding garden features, plant selection and planning Unit reference number F/601/0251	5	2
R2112	Understanding the choice, establishment and maintenance of garden plants and lawns Unit reference number T/601/0251	3	2
R2113	Understanding the production of outdoor vegetables and fruit Unit reference number A/601/0264	3	2
R2114	Understanding protected environments and their use in plant cultivation Unit reference number L/601/0267	3	2

### 3.5 Assessment

Each unit will be assessed by a separate written examination covering all learning outcomes specified in the unit.

Examinations must be taken in a centre approved by RHS Qualifications, or under arrangements for exceptional supervision agreed by RHS Qualifications.

Examinations must be conducted in accordance with the RHS Regulations for the Conduct of Examinations.

Examinations will be offered twice a year in February and June.

Past examination papers including the examiner's comments are published for the past six examination sessions. These are available for download under the appropriate qualification section of the RHS website.

### 3.6 Language

Examinations will be offered in English.

### 3.7 Learning Resources

There is a wide range of books 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 resources best support their studies, or to choose the most appropriate resources for their needs from the wealth of material available.

### 3.8 Grading

Credits for a unit will be awarded to a candidate who achieves a mark of 50% or more in the written examination for that unit.

Where a candidate achieves a mark of 70% or more in the examination for the unit, the credits for the unit will be awarded with commendation.

RHS Ref	Unit	Mark	Pass with Commendation	Pass
R2111	Understanding garden features, plant selection and planning	100	70	50
R2112	Understanding the choice, establishment and maintenance of garden plants and lawns	60	42	30
R2113	Understanding the production of outdoor vegetables and fruit	60	42	30
R2114	Understanding protected environments and their use in plant cultivation	60	42	30

Where a candidate receives credits with commendation in all four mandatory units, the qualification will be awarded with commendation.

## 4. Approved Centres

Centres wishing to offer examinations leading to RHS qualifications must be approved by RHS Qualifications.

Applications for approval should be sent to the Quality Assurance and Relationships Officer at the contact details in section 1.

## 5. Candidate Registration

RHS Approved centres should register candidates for examinations in the units of the qualification through the RHS Qualifications Web Portal.

Approved Centres undertake to obtain on behalf of their learners a Unique Learner Number (ULN), unless the learner chooses not to have one.

If centres supply an email address for candidates at the time of registration, candidates will be invited to open an account on the RHS Qualifications web portal, and will be able to view their examination history, their current registrations, and their results when available.

## 6. Reasonable Adjustments and Special Consideration

RHS Qualifications is committed to ensuring fair assessment for all candidates, and will facilitate access to its qualifications through reasonable adjustments to assessment arrangements for candidates 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 candidate with a visual impairment.

Special consideration is given following the examination to candidates 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 ([rhs.org.uk/qualifications](https://rhs.org.uk/qualifications)), 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 candidate. Application must be made within specified timescales.

## 7. Enquiry about Results service

The following service is available to candidates who have a query regarding their examination result:

### Re-mark and Feedback

Re-marking of the examination paper by an independent examiner.  
Feedback will be provided identifying areas of strength and weakness with constructive suggestions for improvement.

Candidates requesting a re-mark need to be aware that grades may go down as a result of the re-marking.

Applications for the 'Enquiry about Results Service' must be made through the Approved Centre where the candidate registered for the examination. This service will

be available for 28 days from the date of release of the results to Approved Centres on the RHS web portal.

## **8. Examination Dates**

For a full list of examination dates please see the RHS Qualifications Examination Dates, this document is available on the Qualifications page on the RHS website, and on the RHS web portal.

## **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 service or entry for the examination.

### **Late Entries**

RHS Qualifications publishes annually, and distributes to Approved Centres, 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. The total fee charged for late entries is twice the standard examination fee for each unit

### **Replacement Certificate (if lost, damaged or destroyed)**

The fee for a replacement certificate can be found on the RHS Qualifications Fees Notice. Please send your request to the Qualifications Department.

### **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.



## **10. Appeals Procedure**

An Appeals procedure exists to conduct appeals lodged by candidates 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 cases where there is irregularity or malpractice in the conduct of examinations and where RHS Qualifications has imposed a penalty on a candidate, tutor or invigilator, and 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.

## **11. Policy on Malpractice and Maladministration**

Malpractice consists of those acts which undermine the integrity and validity of the 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 candidates 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.

## Understanding garden features, plant selection and planning

RHS reference number: R2111

Unit reference number: F/601/0251

Unit guided learning hours: 38

Unit Level: Level 2

Credit Value: 5

Unit purpose and aim(s): This unit will enable candidates to develop an understanding of basic surveying and design principles and to apply them to basic garden design and planning requirements. Additionally, the unit will enable candidates to develop an understanding of plant selection for soft landscaping.

Learning outcome The Learner will	Assessment criteria The learner can	Indicative column The learner should be able to
Please note that when it states 'could include.....' in the indicative column a candidate can use any examples that are relevant and comply with the assessment criteria of the learning outcome.		
<b>1. Know how to carry out and record a garden survey.</b>	1.1 Describe how to identify potential hazards and risks on a site, including overhead and underground hazards (e.g. electric cables); unsafe buildings, features and trees; topography and existing features (e.g. watercourses and ponds).	Define hazard and risk as used in risk assessments. site topography; unsafe hard landscaping features and garden buildings; trees; areas of water in the garden; overhead and underground services.
	1.2 Describe the potential restrictions which may limit work on the site, including financial constraints; difficulties with access for plant, equipment and materials; topography (degree and extent of slopes); boundary constraints and restrictions on the time the works can be carried out.	Completion of work in stages to suit client's cash-flow, access points for plant and equipment, delivery of materials, the need to negotiate work at boundaries with neighbours, seasonal restrictions to the timing of work (day length, weather) and legal restrictions (local byelaws). Ways to overcome restricted access.
	1.3 State what existing garden features need to be identified, including buildings, hard landscape features, and the trees and plants that are to be retained.	The survey should identify any significant features to be retained such as garden buildings, hard landscaping features, trees and plants with design or sentimental importance and other features that need removal.

	1.4 State why it is necessary to identify the existence of overhead and underground services.	State that the presence of underground services (drainage, water, sewage, gas, oil, electricity, cable TV) may limit where excavations can safely be made, and overhead cables may restrict site access for equipment and large plants. Implications of damaging services in addition to health and safety: cost, inconvenience, damage to soil.
	1.5 Describe how to carry out basic linear surveying techniques, including the use of tapes, offsets and triangulation.	How to carry out a linear survey using measuring tapes; including running measurements along a defined base line, offsets at 90 degrees and triangulation to specific points.
<b>2. Know how to carry out a site appraisal and record essential data.</b>	2.1 State what needs to be recorded when carrying out a site appraisal, including soil type, contour, aspect, micro climate, exposure and drainage.	The collection of physical information about the site; soil depth and texture, pH and drainage, the contour (extent of slopes), aspect and exposure and microclimate (frost pockets, heavy shade, rain shadows, sun traps, wind tunnels); visual clues to areas with microclimates; visual assessment of external features (fine views, eyesores, the style of the house).
<b>3. Understand basic garden planning principles and the elements that contribute to a good design.</b>	3.1 Describe the relevance of garden planning principles to the production of a garden design that 'works' – one that follows accepted 'rules' or 'conventions', and which is pleasing to the eye.	To include examples of how a successful garden design (one which is pleasing to the eye) demonstrates accepted principles of garden planning (unity/cohesion, balance, form, scale/proportion, movement/direction, rhythm, repetition, simplicity).
	3.2 State the meaning of the following terms: symmetry, asymmetry, colour, focal points.	To include examples of each term in a garden context and how colour can be used in garden design to provide unity, adjust mood and play visual tricks. Uses of focal points to include: to draw the eye, to encourage exploration, to distract, to create false perspective, to provide theme interest.
<b>4. Understand the characteristics of accepted garden design styles.</b>	4.1 Describe the difference between formality and informality in garden design.	To include examples of features associated with each style of design, (fountains, knot gardens and wildlife ponds, wildflower meadows).

	4.2 Describe the main characteristics of a knot garden, a landscape garden and a cottage garden.	To include the typical hard and soft landscaping features of a knot garden (clipped hedges, shapes, infill, pattern); a landscape garden (English landscape garden, borrowed views, serpentine lakes, Palladian bridges, ha has, temples, follies, grottos, hermitages, Chinese bridges and pagodas); and a cottage garden (annuals and 'easy' perennials, vegetables, gravel paths, brick edging, picket fences).
<b>5. Understanding the effective and appropriate use of hard landscaping materials.</b>	5.1 Describe a range of horizontal elements: paths, steps, patios and decking. Compare the benefits and limitations of a range of materials for each of the above including concrete, paving and wood.	Comparison to include suitability of each material in practical and in design terms: in-situ concrete, paving (flags, block pavers, brick), wood (railway sleepers, log sections, bark) gravel, man-made decking materials.
	5.2 Describe a range of vertical elements: walls, fences, screens, pergolas, furniture, statuary. For each of the above, compare TWO examples of natural and man-made materials used in their manufacture.	Natural materials to include where appropriate: rock (marble, limestone, flint, slate), wood (timber, wicker), bamboo, reeds. Man-made to include: brick, concrete, plastic, glass fibre and metal.  Comparison to include suitability of each material in practical and in design terms.
	5.3 Describe rock gardens and water features. State TWO examples of manufactured and TWO of natural materials for EACH element.	Rock garden examples to include different types of garden feature for the display of alpines, rock garden, scree garden, troughs; and the materials to include suitable types of stone, hypertufa, artificial rocks, Pulhamite; artificial stone troughs.  Water features to include: open water (raised and wildlife ponds, rills) and self-contained features (fountains, pebble ponds) and materials to include puddled clay, butyl liner, drilled natural stones, metal, glass and plastic, wood and brick for raised ponds.
<b>6. Understand the effective use of soft landscaping elements.</b>	6.1 Name appropriate grass species for the following types of lawn: hard wearing utility, high quality ornamental, shade tolerant.	Examples could include: a utility lawn must include <i>Lolium perenne</i> , and others from <i>Festuca rubra rubra</i> , <i>Poa pratensis</i> , <i>Agrostis capillaris</i> , an ornamental lawn must include <i>Agrostis capillaris</i> + <i>Festuca rubra subsp. commutata</i> , shade tolerant lawn must include <i>Festuca rubra rubra</i> , and others from <i>Poa nemoralis</i> , <i>Poa trivialis</i> , <i>Lolium perenne</i> .

	<p>6.2 Name FIVE evergreen and FIVE deciduous trees (large shrubs), suitable for planting in a domestic garden. State details of their decorative merits, height and spread and site requirements; describe a situation where each could be used effectively.</p>	<p>Tree no more than 10 metres</p> <p>To include:  Evergreen trees: <i>Luma apiculata</i>  <i>Arbutus unedo</i></p> <p>Deciduous trees: <i>Malus</i> 'Golden Hornet'</p>
	<p>6.3 Name FIVE evergreen and FIVE deciduous plant species, suitable for hedging or screening (including formal or informal use). State details of their decorative merits, height and spread and site requirements; describe a situation where each could be used effectively.</p>	<p>Examples could include:  Evergreen: <i>Taxus baccata</i>  Deciduous : <i>Fagus sylvatica</i></p> <p>Give details of the usual size to which plants are grown as a hedge or screen, decorative qualities (formal, informal, leaf, flowering and fruiting); planting requirements and an example of use.</p>
	<p>6.4 Name TEN deciduous and TEN evergreen shrubs suitable for planting in a variety of garden situations. State details of their decorative merits, height and spread and site requirements; describe a situation where each could be used effectively.</p>	<p>Examples could include:  Deciduous: <i>Buddleja davidii</i>, <i>Hamamelis mollis</i>  Evergreen: <i>Mahonia aquifolium</i>, <i>Rosmarinus officinalis</i></p>
	<p>6.5 Name TEN herbaceous perennials suitable for planting in a variety of garden situations. State details of their decorative merits, height and spread and site requirements; describe a situation where each could be used effectively.</p>	<p>Examples could include:  <i>Acanthus spinosus</i>,  <i>Verbena bonariensis</i></p>

	<p>6.6 Name TEN Alpine or Rock garden plants suitable for planting in a variety of garden situations. State details of their decorative merits, height and spread and site requirements; describe a situation where each could be used effectively.</p>	<p>Examples could include: <i>Dianthus alpinus</i>, <i>Iberis sempervirens</i></p>
	<p>6.7 Name FIVE plants grown as biennials, which are suitable for planting in a variety of garden situations. State details of their decorative merits, height and spread and site requirements; describe a situation where each could be used effectively.</p>	<p>Examples could include: <i>Digitalis purpurea</i>, <i>Erysimum cheiri</i></p>
	<p>6.8 Name TEN hardy plants grown as annuals, suitable for planting in a variety of garden situations. State details of their decorative merits, height and spread and site requirements; describe a situation where each could be used effectively.</p>	<p>Examples could include: <i>Lathyrus odoratus</i> <i>Calendula officinalis</i></p>
	<p>6.9 Name TEN half-hardy plants suitable for seasonal bedding. State details of their decorative merits, height and spread and site requirements and describe a situation where each could be used effectively.</p>	<p>Examples could include: <i>Nicotiana alata</i>, <i>Salvia splendens</i></p>
	<p>6.10 Name TEN patio or basket plants suitable for planting in a variety of garden situations. State details of their decorative merits, height and spread and site requirements; describe a situation where each could be used effectively.</p>	<p>Examples could include: <i>Lobelia erinus</i>, <i>Helichrysum petiolare</i></p>

	6.11 Name FIVE bulbs, corms or tuberous plants used for winter or spring interest, and FIVE for summer or autumn interest, in a variety of garden situations. State details of their decorative merits, height and spread and site requirements; describe a situation where each could be used effectively.	Examples could include: <i>Galanthus nivalis</i> , <i>Lilium regale</i>
<b>7. Understand how to incorporate key elements into a cohesive design.</b>	7.1 Describe how elements of hard landscaping should be selected and used to ensure that a design is cohesive.	With reference to 7.1, 7.2 and 7.3  A description of what makes a 'cohesive' design, with examples covering hard and soft landscaping elements and furniture.
	7.2 Describe how elements of soft landscaping should be selected and used to ensure that a design is cohesive.	Coherence - all parts of the design forming a unified whole, linked by consistent styles or materials in hard landscaping and furniture, and themes in planting, to the house itself as part of the garden landscape and the local landscape.
	7.3 Describe how other materials and items (e.g. garden furniture) should be selected and used to ensure that a design is cohesive.	
<b>8. Understand the importance of safe, healthy, environmentally sensitive and sustainable development of garden sites.</b>	8.1 Describe TWO hazards associated with EACH of the following: access, slope, location of features, water, electricity, materials, plants.	Slopes to include inclines on grass, ramps, steps.  Exemplar: Hazards of materials to include splinters, sharp edges (possible limitation of re-used, reclaimed and recycled materials), slippery surfaces. <b>Hazards of construction not required.</b>
	8.2 State how the risks related to the hazards identified in 8.1 can be minimised by careful planning during the planning and design stage.	Exemplar: for materials; the risk of slipping on wood decking minimised by specifying non-slip varnishing materials; risk of splinters by specifying planed/sanded timber.

	8.3 Describe how the environmental sustainability of landscaping materials may affect choices made during the planning and design stage.	Environmental sustainability to include: choice of materials from sustainable sources and using local sources to reduce transport; 'reduce, re-use, reclaim, recycle'.
	8.4 State how sustainable practices in the maintenance of a garden can be integrated successfully during the planning and design stage.	Examples to include the harvesting of rain and grey water, composting areas, use of drought-tolerant plants, minimal use of lawns, mulching, no-dig systems, bio-diverse planting, ponds, insect hotels and wildlife habitats.
	8.5 State how sustainable practices can be undertaken during the construction stage.	State how the ideas of 'reduce, re-use, reclaim, recycle' can be applied during the construction of a garden, to include: transport and waste disposal issues, on-site working practices (not leaving water running for example)



# Understanding the choice, establishment and maintenance of garden plants and lawns

RHS reference number: R2112

Unit reference number: T/601/0263

Unit guided learning hours: 23

Unit Level: Level 2

Credit Value: 3

Unit purpose and aim(s): This unit will enable candidates to develop an understanding of plant selection, establishment and maintenance of a range of ornamental plants.

Learning outcome The Learner will	Assessment criteria The learner can	Indicative column The learner should be able to
Please note that when it states 'could include.....' in the indicative column a candidate can use any examples that are relevant and comply with the assessment criteria of the learning outcome.		
<b>1. Understand the choice of plants for seasonal display and their establishment and maintenance.</b>	1.1 Describe, in the context of seasonal displays, what is meant by the terms: bedding, hardy, half-hardy, tropical, edging, groundwork (infill) and dot plant; give TWO plant examples of EACH.	State what is meant by seasonal displays including when the plants can be planted out. The terms Hardy and Half-hardy should be defined in relation to temperature tolerance (either in degrees Celsius or Zones) as well as plant husbandry.
	1.2 Explain the importance of F1 hybrid plants and the term 'hybrid vigour'. State FOUR specific plant examples.	Significance of hybrid vigour and uniformity of growth rate, height and colours.
	1.3 Name TEN plants suitable for growing in a Hardy annual border.	Examples of Hardy Annuals could include: <i>Calendula officinalis</i> <i>Nigella damascena</i> <i>Tropaeolum majus</i>
	1.4 Name TEN plants suitable for summer bedding displays.	Examples could include: <i>Lobelia erinus</i> <i>Petunia x hybrida</i> <i>Salvia splendens</i> <i>Tagetes patula</i>
	1.5 Name FIVE plants suitable for spring bedding displays, including TWO bulbs (or corms or tubers).	Examples could include: <i>Erysimum 'Bowles's Mauve'</i> <i>Myosotis sylvatica</i> <i>Viola x wittrockiana</i> <i>Bulbs Hyacinthus orientalis and Named Tulipa Cultivars, e.g. Tulipa 'Queen of Night'</i>

	1.6 Name TEN plants suitable for summer display in containers or hanging baskets.	Examples could include: <i>Fuchsia 'Thalia'</i> <i>Lobelia erinus</i> <i>Pelargonium zonale</i> <i>Salvia splendens</i>
	1.7 Name FIVE plants suitable for winter display in containers or hanging baskets.	Examples could include: <i>Ajuga reptans</i> <i>Buxus sempervirens</i> <i>Crocus chrysanthus</i> <i>Hedera helix</i> <i>Viola x wittrockiana</i>
	1.8 Describe the soil or growing media preparation, sowing (H.A border) or planting out of plants for seasonal display for the situations listed in 1.3 – 1.7.	Seasonal displays to include Spring bedding, Summer bedding & Hardy Annual borders. To include: the preparation of annual borders and seasonal bedding displays (removal of previous bedding, soil cultivation, marking out, sowing methods for HA to include Station sowing, Drills and Broadcasting, thinning and planting); growing media, liners and additives for hanging baskets and containers; choice of container; filling and planting of hanging baskets and containers (depth, spacing). Watering.
	1.9 Describe the routine maintenance of seasonal bedding, including control of weeds and common pests and diseases (aphids, slugs and snails, vine weevil, grey mould, powdery mildew) for the situations listed in 1.3 – 1.7	Appropriate seasonal maintenance tasks to include irrigation (hand watering, sprinklers and drip systems), deadheading, feeding.  Methods of weed control to include Physical (Hand weeding methods) control of pests and diseases listed for appropriate situations.  Control of ONE appropriate weed, pest and disease for each situation.
<b>2. Understand the choice of herbaceous perennial plants and 'bulbs' for display, and how to grow them.</b>	2.1 Name TEN herbaceous perennial plants suitable for growing in an herbaceous border.	Examples could include: <i>Aster novi-belgii</i> <i>Hemerocallis fulva</i> <i>Papaver orientale</i> <i>Sedum spectabile</i> <i>Verbena bonariensis</i>

	2.2 Name FIVE herbaceous perennials suitable for growing in shade and FIVE suitable for use as ground cover.	Examples could include: Shade <i>Astrantia maxima</i> <i>Brunnera macrophylla</i>  Ground cover <i>Alchemilla mollis</i> , <i>Geranium macrorrhizum</i>
	2.3 Name TEN bulbs or corms or tubers, of which FOUR should be suitable for growing in the border, FOUR for containers and FOUR for naturalizing.	Examples could include: FOUR suitable for growing in the border including <i>Iris germanica</i> , <i>Crocsmia 'Lucifer'</i> , <i>Dahlia 'Bishop of Llandaff'</i>  FOUR for containers for example <i>Narcissus 'Tête à tête'</i> , <i>Crocus vernus</i> , <i>Galanthus nivalis</i>  FOUR for naturalizing for example <i>Galanthus nivalis</i> , <i>Narcissus 'Tête à tête'</i> , <i>Crocus vernus</i>  <b>NOTE: bulbs can be suitable for more than one category, e.g. <i>Galanthus nivalis</i> can be used in containers, in the border or naturalised in grass.</b>
	2.4 Describe the soil preparation, planting, routine maintenance and control of weeds, pests and diseases (aphids, slugs and snails, vine weevil, grey mould, powdery mildew, stem or bulb eelworm) required for growing herbaceous perennials and bulbs, corms or tubers.	Soil preparation to include cultivation, addition of organic matter and/or fertiliser. Planting to include specification (bare root, container grown, planting techniques for herbaceous perennials and bulbs, corms and tubers. Routine maintenance tasks to include support, watering, deadheading, feeding, and renovation by division. Methods of weed control to include Physical (Hand weeding methods), Chemical (Use of Herbicides) and Cultural (Mulches).  Control of pests and diseases for appropriate situations.
<b>3. Understand the choice of woody plants for display and their establishment and maintenance.</b>	3.1 Name TEN trees suitable for growing in a domestic garden.	Tree no more than 10 metres.  Examples could include: <i>Malus x zumi 'Golden Hornet'</i> , <i>Prunus x subhirtella 'Autumnalis'</i> <i>Acer griseum</i> <i>Amelanchier x grandiflora 'Ballerina'</i> <i>Cercis canadensis 'Forest Pansy'</i>

	<p>3.2 Name TEN shrubs suitable for growing in a domestic garden.</p>	<p>Examples could include:  <i>Potentilla fruticosa</i>,  <i>Buddleja davidii</i>  <i>Cornus alba</i>  <i>Daphne bholua</i>  <i>Hamamelis x intermedia</i>  <i>Forsythia x intermedia</i></p>
	<p>3.3 Name FIVE trees grown for winter interest and FIVE grown for autumn display.</p>	<p>NOTE: Do not include plants which have year round interest, e.g. Evergreens. Give examples which have specific interest at the named season.</p> <p>Examples could include:  Trees for Winter interest  <i>Acer griseum</i>  <i>Prunus serrula</i></p> <p>Trees for Autumn interest  <i>Acer griseum</i>  <i>Amelanchier x grandiflora</i> 'Ballerina'  <i>Cercis canadensis</i> 'Forest Pansy'</p>
	<p>3.4 Name FIVE shrubs grown for winter interest and FIVE grown for autumn display.</p>	<p>NOTE: Do not include plants which have year round interest, e.g. Evergreens. Give examples which have specific interest at the named season.</p> <p>Examples could include:  Shrubs for Winter interest  <i>Cornus alba</i>  <i>Daphne bholua</i>  <i>Hamamelis x intermedia</i></p> <p>Shrubs for Autumn interest  <i>Euonymus alatus</i>  <i>Callicarpa bodinieri</i>  <i>Clerodendrum trichotomum</i>  <i>Rhus typhina</i></p>
	<p>3.5 Name FIVE lime-hating trees OR shrubs.</p>	<p>Examples could include:  <i>Camellia japonica</i>,  <i>Arbutus unedo</i></p>
	<p>3.6 Name FIVE bush roses suitable for growing in a rose bed, including cluster-flowered (floribunda) and large-flowered (hybrid tea) examples.</p>	<p>For example:  <i>Rosa</i> 'Iceberg', cluster-flowered (floribunda)  <i>Rosa</i> 'Sweet Dreams', large-flowered (hybrid tea)</p>

	3.7 Name FIVE climbers and FIVE wall shrubs suitable for a variety of garden situations including shaded and north-facing.	Define climbers AND wall shrubs Examples could include: <i>Hydrangea anomala</i> subsp. <i>petiolaris</i> <i>Lonicera japonica</i>
	3.8 Describe the soil preparation and planting for trees and woody shrubs.	To include timing, site preparation (cultivation, addition of ameliorants, mycorrhiza and/or fertiliser), specification (bare root, root-ball, container-grown); planting techniques (tools, depth and spacing, staking, protection); formative pruning, mulching and watering.
	3.9 Describe the routine maintenance for trees and woody shrubs, to include pruning and the control of weeds and common pests and diseases (aphids, powdery mildew, black spot of roses, canker, coral spot, honey fungus).	To include control of annual and perennial weeds; pruning to include timing and methods for named Spring flowering shrub (e.g. <i>Forsythia x intermedia</i> 'Lynwood'), Summer flowering shrub (e.g. <i>Buddleja davidii</i> ) and a Winter stem specimen (e.g. <i>Cornus alba</i> ); checking protection and ties, stakes; control of aphids, powdery mildew and blackspot on roses; coral spot on shrubs; canker and honey fungus on trees.
<b>4. Understand the choice of alpine and rock garden plants and how to grow them.</b>	4.1 Name FIVE alpine or rock garden plants for spring display and FIVE for summer display.	Do not include heaths, heathers and conifers.  State what is meant by: - true alpiners - rock garden plants.  Select rock garden plants or true alpiners for spring and summer display examples could include: <i>Spring: Pulsatilla vulgaris, Sedum acre</i>  <i>Summer: Leontopodium alpinum, Helianthemum nummularium</i>
	4.2 Describe soil characteristics, soil preparation and routine maintenance for the display of alpine or rock garden plants in open soil.	To include soil requirements (free draining, good aeration, ability to hold moisture, appropriate pH, low nutrient content, free of weeds, pests and diseases) and preparation for planting in rock gardens, scree beds and gravel borders. Routine maintenance to include trimming, mulching with grit, winter protection, weeding, control of ONE relevant pest and ONE disease for these situations.

	4.3 Describe choice of container, the characteristics and preparation of the growing medium, and the routine maintenance required for an alpine or rock garden display in containers.	To include growing media requirements (free draining, good aeration, ability to hold moisture, appropriate pH, low nutrient content, free of weeds, pests and diseases); factors affecting choice of container/sink, trough; planting methods and routine maintenance to include trimming, mulching with grit, weeding, winter protection; control of ONE relevant pest and ONE disease for these situations.
<b>5. Understand the planting and maintenance of a garden pool.</b>	5.1 Name TWO AQUATIC plants from each of the following groups: floating, deep-water, marginal and bog plants.	Examples could include: Floating: <i>Stratiotes aloides</i> Deepwater: <i>Nymphaea</i> 'Chromatella' Marginal: <i>Caltha palustris</i> Bog garden plant: <i>Gunnera manicata</i>
	5.2 Describe the planting and establishment of aquatic plants in a garden pool.	To include selection for suitable vigour, containers, growing medium, nutrition, planting techniques. Differentiate between deep water aquatics, floating, marginal plants (in containers) and also bog plants (bog garden in soil).  <b>Construction of pond not required (see R2111).</b>
	5.3 Describe the annual maintenance of a garden pool including possible controls for algae including blanket weed.	Seasonal maintenance tasks to include: Water/vegetation balance, role of oxygenator plants; maintenance of water levels in summer; control of vigorous growth and invasive pondweeds, division of plants; netting against leaves, management of ice formation.  Controls for algae to include pond balance, use of barley straw or other additives and manual methods of removal.
<b>6. Understand the establishment and maintenance of lawns.</b>	6.1 State appropriate grass mixtures for the establishment of a high quality ornamental lawn and for a hard-wearing utility lawn.	State a mix of grass species for an ornamental lawn Examples could include: <i>Agrostis capillaris</i> + <i>Festuca rubra</i> subsp. <i>commutata</i> and a utility lawn which must include <i>Lolium perenne</i> , plus others such as <i>Festuca rubra rubra</i> , <i>Poa pratensis</i> , <i>Agrostis capillaris</i>

	6.2 State the benefits and limitations of establishing lawns from seed.	To be compared with establishing lawns by turf (see 6.4) to include ideal months to carry out task, time required for establishment, immediate impact, evenness of initial growth, sustainability, species in mix. Costs (either in purchase or labour these must be qualified, i.e. x£s per kilo or labour hours x square metres).
	6.3 Describe the procedure for establishing a lawn from seed.	To include: timing, site preparation (hand cultivation, weed eradication methods, consolidation, levelling, base dressing stating both the ingredients and rate), seed sowing (techniques, mixtures, rates as grams per square metre), protection, irrigation, first cut.
	6.4 State the benefits and limitations of establishing a lawn from turf.	To be compared with establishing lawns by seed (see 6.1) to include ideal months to carry out task, time required for establishment, immediate impact, evenness of initial growth, sustainability, customising of species in mix. Costs (either in purchase or labour these must be qualified, i.e. x£s per kilo or labour hours x square metres).
	6.5 Describe the procedure for establishing a lawn from turf.	To include: timing, site preparation (hand cultivation, weed eradication methods, consolidation, levelling, base dressing stating both the ingredients and rate), laying techniques, top dressing naming material, irrigation. Do not include drainage systems.
	6.6 Describe the annual maintenance programme for quality ornamental and for hard-wearing utility lawns.	To include: for a high quality ornamental lawn and for a hard-wearing utility lawn: height of cut, frequency of cut, remove clippings or not; feeding, scarifying, aeration, top dressing, edging, weed control, control of named pests and diseases. Tasks should relate to a 12-month maintenance programme.  Identify differences between the maintenance procedures for utility and fine turf.
	6.7 Describe the range of equipment used for mowing, feeding, scarifying and aerating to maintain lawns.	To include: a high quality ornamental lawn and for a hard-wearing utility lawn; types of mower, lawn feed distributor, scarifier (springtine rake and powered mechanical) and aerator (solid and hollow tines).

	<p>6.8 Describe the symptoms of a range of common lawn pests and diseases, including red thread, <i>Fusarium</i> patch, fairy rings, leatherjackets and moles; state an appropriate control measure for EACH.</p>	<p>Symptoms limited to effects on the grass seen by inspecting the surface.</p>
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## Understanding the production of outdoor vegetables and fruit

RHS reference number: R2113

Unit reference number: A/601/0264

Unit guided learning hours: 23

Unit Level: Level 2

Credit Value: 3

Unit purpose and aim(s): This unit will enable candidates to develop an understanding of the basic cultural operations and production methods necessary to obtain outdoor vegetable and fruit crops.

Learning outcome The Learner will	Assessment criteria The learner can	Indicative column The learner should be able to
Please note that when it states 'could include.....' in the indicative column a candidate can use any examples that are relevant and comply with the assessment criteria of the learning outcome.		
<b>1. Know the importance of site selection for outdoor food production in a garden or allotment.</b>	1.1 State the factors to be considered when selecting a site including: soil depth, texture and structure, drainage, pH, aspect, slope, susceptibility to frost and wind, area of land available and availability of water.	Indicate how each factor listed will affect the suitability of a site for growing fruit and vegetables outdoors.
	1.2 Describe the reasons for providing shelter for an outdoor food production area including, the effects of wind reduction, frost potential and influences upon pollination.	Indicate how the effects of providing shelter influence the growth of fruit and vegetable crops.
	1.3 State the benefits and limitations of living and non-living windbreaks.	To include: the characteristics of effective living windbreaks: can filter winds effectively but take up space, encourage beneficial organisms but can also harbour pests and diseases, require time to establish and need to be maintained; non-living windbreaks: take less space but require more frequent replacement.
	1.4 Name <b>FOUR</b> plant species suitable for a living windbreak.	Examples could include: any deciduous or evergreen species suitable for informal or formal use. <i>Fagus sylvatica</i> <i>Carpinus betulus</i> <i>Pinus nigra</i> <i>x Cuprocyparis leylandii</i> <i>Crataegus monogyna</i>

	1.5 Name <b>FOUR</b> types of non-living permeable windbreak.	To include: plastic mesh, webbing, fencing, trellis or hurdles.
<b>2. Understand the cultural operations used to produce outdoor food crops in a garden or allotment.</b>	2.1 Describe a range of soil cultivation techniques suitable for the vegetable garden including: digging, rotary cultivation, consolidation and tilth production.	To include: single and double digging; tilth production for sowing seed (fine, medium and large) and planting (transplants, sets).  Double digging here refers to removing one spit of soil, working the second spit and incorporating organic matter; not to the removal of two complete spades' depth of soil.
	2.2 Describe how the timing of soil cultivations will be influenced by soil texture, structure, weather and climate.	To include: the influence of the soil texture and structure on its readiness for cultivation; the effect of weather and the variance in the 'cultivation window' depending on local climate and soil texture.
	2.3 Describe what is meant by the bed system for growing vegetables. Compare this with open ground production.	To include: compaction / traffic /walking over the ground to cultivate it; depth of soil; speed of warming;
	2.4 Describe what is meant by a raised bed, giving a specification for a typical raised bed and paths.	To include the following methods: soil thrown up from paths in between beds in mounds; and a framework of timber or other material filled with soil.  Beds not more than 1.5m width, 3m length, paths (approx.) 0.5m wide.
	2.5 Explain the 'no-dig' system of managing raised beds.	A description to include: initial weed removal, use of surface mulches to smother weed growth and addition of large quantities of organic matter to the surface only. Give reasons for the use of the 'no-dig' system.
	2.6 State the methods used to advance and extend the productive season of outdoor food crops including: the use of polythene, mulches, fleece, 'enviromesh', low tunnels, cloches and cold frames.	State the methods used to warm soil to allow early sowing; to protect crops against spring frosts and bring on tender vegetables for planting out; and to allow late crops to continue under protection.
	2.7 Describe propagation methods used in the production of vegetable	To include: direct sowing in drills and thinning; transplanting from seedbeds; group

	crops, including: direct sowing and raising plants in seed beds, blocks and modules.	sowing in blocks, and sowing into modules for tender vegetables.
<b>3. Understand the principles of vegetable crop production.</b>	3.1 Describe the individual production of vegetable crops including runner beans, winter cabbage, Brussels sprouts, carrots, courgettes, onions, leeks, beetroot, potatoes and salad crops to include lettuce and radish.	To include: the production of each crop from time of sowing/planting out to harvest, covering all the relevant activities listed in 3.2. Named cultivar/s of each vegetable listed.
	3.2 Describe how quality and yield may be determined by the following: base and top dressings, thinning, weed control, crop support, irrigation and pest and disease control.	To include: examples of vegetable crops to illustrate effects on growth and yield.
	3.3 Describe how EACH of the vegetables in 3.1 may be harvested and stored successfully.	To include: methods of harvesting (single harvest, continual harvesting) and storage (preparation, conditions, length of time) for individual crops.
	3.4 State ONE common pest and ONE common disease of the vegetables named in 3.1, describing symptoms and control measures.	To include physical, cultural and chemical control measures where appropriate.
	3.5 State the benefits and limitations of crop rotation.	Benefits to include: avoidance of pest and disease build-up in beds, effective use of nutrients in soil. Limitations to include: only effective against soil borne P&D, not effective against non-specific P&D; the amount of space required and commitment; restriction of choice.
	3.6 Describe a four-bed system of crop rotation.	To include an appropriate succession of plant groups over four years.
	3.7 Explain how successional cropping can be achieved for a NAMED crop by using sowing and planting dates, choice of	To include a description of each: staggered sowing; planting dates; choice of cultivars; use of protection (fleece, polythene) and soil warming to extend season.

	cultivars and environmental protection.	
	3.8 Explain how intercropping can be used to maximise production.	Use ONE example to show how rapid-growing crops can be sown between rows of slower vegetables to maximise production from a given area.
	3.9 Describe the effect of plant spacing on a NAMED crop.	To include close spacing to produce 'baby' vegetables and uniformity. Normal spacing to maximize crop potential.
	3.10 Describe what is meant by 'cut and come again' vegetables.	Distinguish between single harvesting and 'cut and come again' cropping with reference to lettuce and spinach.
<b>4. Understand the production of top and soft fruit for a garden or allotment.</b>	4.1 Distinguish between top and soft fruit.	State what is meant by the terms 'top fruit' and 'soft fruit'.
	4.2 List the types of top fruit (including apples, pears, plums and cherries) and factors for their selection, to include dessert and culinary cultivars; harvesting season; and storage capability.	To include: purpose of fruit (dessert, culinary); flavour; late or early season cropping; potential for storage. Named cultivar/s of each top fruit listed.
	4.3 List the major types of soft fruit (strawberries, raspberries, blackcurrants, gooseberries, blueberries and grapes) and factors to be considered when choosing suitable cultivars, to include the fruit type; choice of early, mid and late season cultivars; flavour; and freezing capability.	To include: fruit type (cane, bush, vine); purpose of fruit (dessert, culinary); flavour; late or early season cropping; potential for freezing or other storage methods. Named cultivar/s of each soft fruit listed.
	4.4 Describe the production of top fruit (apples and plums) and state the factors to be considered when choosing plants, including fruit type; plant quality; rootstock choice; size of tree; training style; pollination compatibility and cultural requirements.	Plant quality to include method of supply (bare root, container); pollination requirements to include an outline of apple pollination groups and triploids; production to include establishment (ground preparation, planting and support, mulching, formative pruning for tree shape and yield, irrigation) ; and maintenance (pruning, thinning fruit, top dressing, control of one main pest and one disease).

	4.5 Describe the production of soft fruit including raspberries, blackcurrants and strawberries.	Production to include: establishment (ground preparation, planting and support where necessary, mulching, pruning and irrigation); and maintenance (pruning, top dressing, weed, pest and disease control, replacement and tying in where appropriate).
	4.6 State the advantages of purchasing certified stock.	Advantages to include: certified stock is virus-free; guaranteed true to name and type.
	4.7 Describe how quality and yield can be determined by the following: planting; base and top dressings; mulching; weed control; irrigation; training systems; appropriate pruning; and pest and disease control.	Including examples of how each factor can affect quality and yield in named fruit. Training systems to include cordons, fans, espaliers and step-overs.
	4.8 Describe the importance of formative and maintenance pruning for tree shape and yield.	To include: formative pruning for an apple tree from whip to productive open-centred bush; and maintenance pruning of a spur bearing apple tree.
	4.9 Explain the importance of cross pollination and fertilisation in top fruit, including flowering periods, compatibility, diploid and triploid cultivars.	State what is meant by the terms compatibility and incompatibility, diploid and triploid.  Explanations to include: pollination groups in apples (based on flowering periods); examples of diploid and triploid apple cultivars; self-fertile cultivars.
	4.10 State four methods of ensuring effective pollination in fruit production.	To include: cultivar selection; planting extra pollinators such as crab apple; shelter belts and hedges to encourage pollinators and provide windbreaks.
	4.11 Describe the harvesting and storage of the fruit crops named in 4.4 and 4.5.	To include: period of harvest; ripeness /under-ripeness at picking; method of storage, period of storage; storage conditions (packing, atmosphere, temperature).
	4.12 State ONE common pest and ONE common disease of the fruits named in 4.4 and 4.5, describing symptoms and control measures.	For each pest and each disease, give ONE characteristic symptom and ONE appropriate method of control from: physical (barriers, sticky traps/glue bands, pheromone traps); cultural controls (certified stock, resistant cultivars); biological controls (indigenous predators of pests, pheromone traps to reduce pest breeding); and chemical controls.

## Understanding protected environments and their use in plant cultivation

RHS reference number: R2114

Unit reference number: L/601/0267

Unit guided learning hours: 23

Unit Level: Level 2

Credit Value: 3

Unit purpose and aim(s): This unit will enable candidates to develop an understanding of the control of the environment in greenhouses, frames, polythene tunnels and cloches; the horticultural uses of protected environments; the production of a range of plants in greenhouses and tunnels; and the care of plants in the house and conservatory.

Learning outcome The Learner will	Assessment criteria The learner can	Indicative column The learner should be able to
Please note that when it states 'could include.....' in the indicative column a candidate can use any examples that are relevant and comply with the assessment criteria of the learning outcome.		
<b>1. Know a range of types of protected structure, and their use in growing plants.</b>	1.1 Describe a range of protected structures, to include greenhouses, cold frames, polythene tunnels, cloches and conservatories.	To include labelled diagrams of each type of protected structure to show the main structural features.
	1.2 Describe horticultural uses for each of the structures listed in 1.1, including plant propagation, crop production and decorative display.	To include: Plant propagation including taking cuttings and sowing seeds; 'growing on' tender seedlings; hardening off; growing fruit, salad vegetable and herb crops; main season cropping, and displaying tender perennials and houseplants, as well as specialist plant collections.
<b>2. Know the environment provided by a range of protected structures.</b>	2.1 Describe the environmental differences between the protected environment and outdoors including temperature; humidity; light; concentration of atmospheric gases; air movement; and irrigation requirements.	To include: outdoor variability and seasonality, contrasted with indoors – control and supplementation.  Protected environment details: for air and soil temperature - the range of growing conditions from frost-free winter protection to the requirements for shade in summer; for relative humidity the importance of air movement, damping down; for light – supplementing and replacement lighting, day length and quantity of light; for concentration of atmospheric gases – possibility of carbon dioxide becoming a limiting factor for photosynthesis; carbon dioxide enrichment

		reasons and methods; air movement – ventilation by natural air movement, forced draught or fan ventilation; for humidity control and to minimise disease transmission; irrigation requirements – methods of overhead watering and sub-irrigation for crops grown in containers and in the border soil.
	2.2 State the benefits and limitations of using protected structures for growing plants, (for example tomato, <i>Lycopersicon esculentum</i> ) compared with growing the same plants outdoors.	Examples to include: tomato ( <i>Lycopersicon esculentum</i> , also called <i>Solanum lycopersicum</i> ).  Benefits arising from the control and supplementation listed in 2.1; higher yields and quality; longer season of fruiting and ripening; can grow a greater range of cultivars.  Limitations – relative costs; effort required; different pest and disease problems indoors.
	2.3 Describe the effect of the environmental factors listed in 2.1 on plants in a protected environment.	To include examples using named plants and horticultural situations.
<b>3. Know the structural and cladding materials used for a range of protected structures.</b>	3.1 List and describe the characteristics of a range of materials used for framework construction including, steel, aluminium, wood, and plastics. State the benefits and limitations of EACH.	Characteristics to include: weight, strength, reduction of light transmission, aesthetics, and relative cost compared to other structural materials.
	3.2 Describe the properties of different cladding materials, which can be used for structures, including glass; polyethylene film; polycarbonate; acrylic sheets, shade netting; and horticultural fleece. State the benefits and limitations of EACH.	Characteristics to include: lifespan, light transmission, surface abrasion, strength, weight, safety, relative costs compared to other cladding materials.
<b>4. Understand the control of the environment in protected structures.</b>	4.1 Describe the factors that affect light levels in protected structures, including shape of structure; site factors; orientation; type	To include: shape of structure – Venlo, widespan, Mansard, curvilinear; Angle of incidence. aesthetics; site factors – exposed/sheltered, latitude; orientation – E-W, N-S;

	and condition of cladding materials.	type (see 3.2) and condition of cladding materials – new, scratched, dirty, screened/painted with shading compound.
	4.2 Describe how the temperature can be maintained in structures including heating by gas, oil or electricity; heat distribution using circulating water and air; cooling by forced or natural ventilation; evaporation; and shading.	To include information on methods of heating and cooling protected structures; relative costs compared to other heating systems; and practical considerations such as reliability/supply to site.
	4.3 Describe methods of changing the relative humidity (RH) in a protected environment, including the effects of ‘damping down’, ventilation and temperature changes.	State what is meant by ‘damping down’. Describe patterns of ventilation in a structure which will help adjust relative humidity. The use of forced draught or fan ventilation and natural ventilation systems. Describe how changes in temperature affect relative humidity which in turn affect water and nutrient uptake.
	4.4 Describe manual and automated methods of irrigation including the use of watering cans, hose pipes, capillary systems and ‘drip’ systems.	To include the benefits and limitations of different watering methods (for example the potential for disease from overhead watering of some crops). Containerised crops and crops grown in border soil.
	4.5 Describe how light levels can be manipulated by the use of supplementary lighting and shading, including blinds and shading paints.	To include the use of: shading, blinds and paints to avoid overheating in protected structures; supplementary lighting to extend the growing season; and, <b>in outline only</b> , use of artificial light/dark periods to prepare poinsettia crops.
	4.6 Describe the importance of cultural and biological controls to limit the damage caused by plant pests and diseases.	State what is meant by cultural and biological controls; Describe the use of cultural controls to limit two pests or diseases. Give two examples of how biological controls are used for specific pests (Latin names for biological controls are not required: type of control - nematode, mite, wasp, ladybird – is sufficient with the correctly identified pest.) State the advantages that cultural and biological control have over chemical control methods.



<p><b>5. Know the types of container and growing media used for production and display in protected environments.</b></p>	<p>5.1 Compare the properties and characteristics of materials used in the manufacture of plant containers including</p> <p>terracotta, plastic, polystyrene, peat, paper, natural and reconstituted stone, and recycled materials.</p>	<p>To include: properties – weight, strength, colour, porosity, heat retention, longevity, disposability; characteristics – heavy/light, breakable, temperature affected by colour, various watering requirements. Relative costs compared to other containers.</p> <p>Exemplar: Polystyrene is used for the manufacture of modular bedding containers. It is very light, non-porous, brittle but quite strong, generally supplied in white which does not heat up the rootzone of bedding plants excessively. Watering from below is effective as the base is pierced for root growth. Polystyrene bedding containers are not designed for re-use but can be broken up and used to increase drainage in large containers; they are not recyclable.</p>
	<p>5.2 Describe the factors that should be considered when choosing containers for the display of plants in greenhouses and interior displays, including management considerations and visual appeal.</p>	<p>To include: management considerations – moving, watering (including whether containers are water tight) cleaning; visual appeal – aesthetics, domestic colour schemes and styles. Weather resistance.</p>
<p><b>6. Understand the horticultural uses of the protected environment.</b></p>	<p>6.1 Describe the use of protected environments for the over-wintering, production and display of plants.</p>	<p>To include one example for each situation.</p>
	<p>6.2 Describe the production of a range of plants which can be grown in a protected environment in a garden situation under the following headings: propagation and establishment; maintenance; control of pests, diseases and disorders. Examples should include one decorative pot plant (<i>Cyclamen persicum</i>), one salad crop (<i>Lycopersicon esculentum</i>), one cut flower (<i>Chrysanthemum x</i></p>	<p><i>Lycopersicon esculentum</i> is also called <i>Solanum lycopersicum</i>.</p>

	<i>morifolium</i> ), one bedding plant ( <i>Impatiens walleriana</i> ) and one bulb for forcing ( <i>Narcissus Tête à tête</i> ').	
<b>7. Understand the care of plants in an interior situation.</b>	7.1 Describe the environmental factors that must be taken into account when displaying plants inside domestic buildings.	To include the challenges faced by plants in a domestic environment: temperature; humidity; light; air movement; and irrigation requirements. Pollution and dust problems Health and safety Public pedestrian traffic.
	7.2 Describe the choice of suitable containers and growing media for house plants.	To include: management considerations and visual appeal of containers; drainage, nutrients and water retention in composts and hygiene.
	7.3 Describe the management of one fern ( <i>Adiantum raddianum</i> ), one foliage ( <i>Ficus benjamina</i> ) and three seasonal flowering plants ( <i>Euphorbia pulcherrima</i> , <i>Kalanchoe blossfeldiana</i> , and <i>Saintpaulia ionantha</i> ) under the following headings: potting; feeding; watering; deadheading; re-potting; pest and disease identification and control.	To include; Propagation, establishment, growing on, support, environmental control, pest and disease identification and control.