

NextGen: HN unit specification

Production Horticulture (SCQF level 7)

Unit code: JPZ9 47

SCQF level: 7 (24 SCQF credit points)

Valid from: August 2026

This unit specification provides detailed information about the unit to ensure consistent and transparent assessment year on year. It is for lecturers and assessors, and contains all the mandatory information you need to deliver and assess the unit.

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Unit purpose

This project-based unit is suitable for learners studying HNC Horticulture or similar routes. Learners develop the knowledge and skills required to produce ornamental, cut flower and edible crops. They learn about production planning, and put this into practice as they learn how to propagate and produce a variety of crop plants.

Learners also develop skills in information and communications technology (ICT), finance and marketing in the context of planning a commercial crop.

Entry requirements and progression routes

Entry to this unit is at your centre's discretion. While learners would benefit from previous horticultural knowledge or experience, they do not need it to study the unit.

Before they start, we recommend learners have completed one or more of the following:

- NC Horticulture at SCQF Level 5, ideally to include some level 6 units
- SVQ Horticulture at SCQF Level 6
- a relevant City & Guilds qualification at SCQF level 6
- a minimum of one Scottish Higher at grade C or above, or one A-level at grade D or above
- other equivalent qualifications
- relevant industry experience

If learners are studying the unit as part of HNC Horticulture, they may be able to progress to HND Horticulture, or go directly into employment in horticulture.

Unit outcomes

Learners who complete this unit can:

1. produce a production plan for a crop
2. propagate a range of plants using a variety of techniques
3. produce a range of crops
4. describe how plant growth and development and plant physiology are manipulated in the production of plants

Evidence requirements

Outcome 1

Using a range of appropriate software, learners produce evidence in the form of a production plan for one crop, to include:

- a description of the sectors that make up the production horticulture industry, the general infrastructure required for different sectors, and the markets for these sectors
- a justification of their selected infrastructure for the chosen crop
- a description of how to source quality propagation material for the chosen crop
- a description of a range of propagation techniques appropriate for the chosen crop and justification of the preferred method
- a selection and description of:
 - a suitable propagule environment
 - a suitable growing media
 - production methods suitable for a chosen end point
 - a suitable growing-on environment
- specifications of the crop for a chosen end point
- marketing material for the crop for retail sale using appropriate software, including crop pricing, and taking into consideration general production costs and promotional material

Outcome 2

Learners safely and effectively propagate a range of plants using appropriate techniques, including all of the following:

- softwood stem cuttings
- semi-ripe stem cuttings
- hardwood stem cuttings
- division
- seed

And at least two of:

- layering
- leaf cuttings
- root cuttings
- grafting
- bulb scaling

Learners must:

- provide appropriate care for propagules
- select and use appropriate growing media and containers
- be able to identify the plants they propagate by their botanical names

Learners must consider health and safety for all practical activities carried out.

Learners could include evidence in a portfolio, such as:

- practical activity including:
 - photographs
 - video footage
 - assessor observation checklists
- health and safety considerations

Outcome 3

Learners produce one or more crops from at least three of the following categories:

- protected ornamental
- hardy ornamental
- bedding
- vegetable crops
- fruit crops
- cut flowers
- trees
- environmental — for example, native plants for habitat restoration
- aquatic plants

Learners must identify an appropriate end point for each crop grown.

Where relevant, learners should:

- select appropriate growing media and containers, and pot on plants or propagules
- provide appropriate irrigation and nutrition
- control the temperature, humidity and light regime
- carry out plant-protection techniques
- formatively prune appropriately for chosen end point or specification

Learners must use batch production to ensure they can:

- repeat techniques, as they would in a commercial setting
- identify variations in a batch, such as variable growth rate or flowering time

Learners must identify the plants produced by their botanical names. They must consider health and safety for all practical activities carried out.

Learners could include evidence in a portfolio, such as:

- practical activity including:
 - photographs
 - video footage
 - assessor observation checklists
- health and safety considerations

Outcome 4

Learners must describe how plant growth and development and plant physiology are manipulated in the production of plants, including:

- temperature regulation
- CO₂ supplementation
- nutrient regimes
- light factors: light intensity, photoperiodism and wavelength
- plant growth substances and exogenous plant growth regulators
- physical manipulation

Learners could include evidence in a portfolio, such as:

- practical activity, including:
 - photographs
 - video footage
 - assessor observation checklists
- health and safety considerations

Knowledge and skills

Knowledge	Skills
Outcome 1 Learners should understand • how to produce a production plan for a chosen crop plant, including: ○ the sectors that make up commercial production horticulture in the UK ○ the general infrastructure that different sectors require ○ how to select appropriate infrastructure for a specific crop ○ how to source quality propagation material for a specific crop ○ how to select an appropriate propagation technique ○ the environmental requirements for propagules and for growing crops on ○ how to select appropriate growing media ○ how to produce a crop to required specifications ○ how to use appropriate software for production planning ○ how to calculate the costs involved with the production of a crop and the value of a crop ○ how to market a crop for retail sale	Outcome 1 Learners can: • describe the sectors that make up commercial production horticulture in the UK • describe the infrastructure that production horticulture requires • select appropriate infrastructure for a specific crop • describe and justify their choice of: ○ propagation techniques ○ growing media ○ production techniques • describe and justify the environmental requirements for propagules and growing plants on • use appropriate IT software to produce a production plan • calculate the costs to produce a crop • assign an appropriate value to a crop and produce marketing material for retail sales

Knowledge	Skills
Outcome 2 Learners should understand: • how to choose appropriate methods of propagation for a range of crop plants • why different propagation techniques are appropriate for different types of plant • how to carry out a range of propagation techniques • why different crops require different growing media • why different crops require different containers • the care requirements for propagules for a range of crops • how to recognise identifying characteristics of plants and the use of botanical nomenclature • the health and safety considerations appropriate to propagation activities	Outcome 2 Learners can: • choose appropriate methods of propagation for a range of crop plants • safely carry out a range of propagation techniques • select appropriate growing media for a range of crops • select appropriate containers for a range of crops • care for the propagules for a range of crops • identify a range of plants • carry out the plant propagation and care of propagules practical activity safely
Outcome 3 Learners should understand: • how to choose appropriate production methods for a range of crop plants • why different production methods are appropriate for different types of plants • how to choose appropriate growing media and containers for a range of crops • how to provide appropriate care for a range of crops	Outcome 3 Learners can: • safely carry out appropriate production techniques to grow crops to particular specifications, including: ○ potting on ○ formative pruning ○ plant protection • choose appropriate growing media for a range of crops • choose appropriate containers for a range of crops • identify a range of plants

Knowledge	Skills
Outcome 3 (continued) Learners should understand: • the importance of production techniques in growing for particular specifications • how to recognise identifying characteristics of plants and the use of botanical nomenclature • the health and safety consideration appropriate to propagation activities	Outcome 3 (continued) Learners can: • provide appropriate environmental conditions for the production of a range of crops, including: ○ irrigation ○ temperature ○ humidity control ○ light-level adjustment
Outcome 4 Learners should understand: • the importance of the manipulation of plant growth processes and development in horticultural practice	Outcome 4 Learners can: • grow plants optimally by manipulating the growing environment

Meta-skills

You must give learners opportunities to develop their meta-skills throughout this unit. We have suggested how to incorporate the most relevant ones into the unit content, but you may find other opportunities.

Self-management

This includes focusing, integrity, adapting and initiative. The most relevant are:

- focusing:
 - carefully concentrating on all the relevant criteria during production planning
- integrity:
 - carefully assessing choices about labour, environmental impacts and health and safety considerations
- adapting:
 - accommodating unexpected situations and events, such as weather or plant-health issues
- initiative:
 - making confident decisions about crop production

Social intelligence

This includes communicating, feeling, collaborating and leading. The most relevant is:

- collaborating:
 - working together to produce crops in shared workspaces

Innovation

This includes curiosity, creativity, sense-making and critical thinking. The most relevant are:

- curiosity:
 - researching and designing production plans
- sense-making:
 - selecting appropriate propagation and production methods from a range of options
- critical thinking:
 - using methodical reasoning to make decisions

Literacies

This unit provides opportunities to develop the following literacies.

Numeracy

Learners develop their numeracy skills by calculating costs and prices to investigate whether a crop would be profitable to grow.

Digital

Learners improve their digital skills and computer literacy by presenting a production plan using appropriate software to produce costing and pricing spreadsheets, and marketing information for a crop.

Learning for Sustainability

Throughout this unit, you should encourage learners to develop their skills, knowledge and understanding of sustainability.

This includes:

- a general understanding of social, economic and environmental sustainability
- a general understanding of the United Nations Sustainable Development Goals (SDGs)
- a deeper understanding of subject-specific sustainability
- the confidence to apply the skills, knowledge, understanding and values they develop in the next stage of their life

Delivery of unit

This is a mandatory unit in HNC Horticulture. You can integrate delivery of this unit with any of the following units in the HNC by producing plants to be used in these contexts or as part of a work-experience placement:

- Maintaining Gardens and Greenspace
- Designing Gardens and Greenspace
- Ecology and Environment for Horticulture
- Social and Community Horticulture

Learners can use the scientific reasoning they gain in the mandatory Plant Biology unit to underpin their decision making in this unit.

Additional guidance

The guidance in this section is not mandatory.

Content and context for this unit

Produce a production plan for a crop (outcome 1)

In their preparation, research and execution of a production plan, learners can:

- ensure they have access to a range of appropriate software, including word processing and spreadsheets
- include, in their description of sectors, classifications such as:
 - edibles, ornamentals, cut flowers
 - field production, protected production
 - herbaceous, shrub, tree production
 - soft fruit, orchard production
 - propagation nurseries, cut flower nurseries, growing-on nurseries, retail nurseries
- include as markets for these sectors:
 - retail
 - inter-nursery
 - wholesale
 - amenity
- source quality propagation material, including:
 - stock plant care
 - seeds of high quality and provenance, or of cutting-material quality

- describe a propagation technique appropriate to the chosen crop, and justify its selection using practical and scientific reasoning; production can be:
 - from seed
 - softwood
 - semi-ripe or hardwood stem cutting
 - division or layering
 - a specialist method, such as bulb scaling, root or leaf cuttings, or grafting
- take propagule environment factors into account, such as
 - irrigation
 - temperature
 - humidity
 - light levels
- justify their choice of growing media by its suitability to the situation and the crop, including:
 - structure
 - nutrient content
 - drainage
 - suitability for container type
 - price
 - ease of handling
 - environmental impact
- describe their production methods and growing-on environment, including:
 - formative pruning
 - provision of nutrients
 - irrigation
 - temperature control
 - humidity control
 - light levels
 - plant protection

- give a specification suitable to the chosen, possibly theoretical, end point for the crop such as:
 - plant trials
 - breeding programmes
 - retail sale
 - wholesale
 - amenity
 - habitat restoration

- propose a realistic price for the crop, taking into account general production costs and using appropriate software (spreadsheets, word processing and publishing), and produce promotional material in the form of planned retail display materials, such as:
 - bench cards
 - labelling
 - garden centre positioning
 - seasonal promotions
 - possible linked sales

Propagate a range of plants using a variety of techniques (outcome 2)

Learners propagate a range of plants using different techniques appropriate to plant type. You should provide learners with several growing media and container options so that they can choose appropriately for each crop propagated.

Care for propagules can include:

- watering
- shading and supplementary lighting
- humidity and temperature control

- plant-protection techniques, such as:
 - weed prevention or removal
 - pests and diseases
 - protection from abiotic factors, such as frost

Learners should be able to correctly identify the plants they propagate by their botanical names

Produce a range of plants (outcome 3)

Learners grow a range of crop types to gain experience of different production techniques for different types of plants; for example, the different types of formative pruning required for herbaceous, shrub or tree crop specifications.

Learners must use batch production to ensure they can:

- repeat techniques, as they would in a commercial setting
- identify variations in a batch, such as variable growth rate or flowering time

You should provide learners with several growing media and container options, so that they can choose appropriately for each crop propagated. Learners can then identify the required specification for each crop batch, according to a selected given end point, such as:

- wholesale
- retail or amenity sale
- plant trials
- planting out in an ornamental or environmental setting
- social purposes

Learners should be able to correctly identify the plants they produce by their botanical names.

Resources

Learners must have access to a range of resources, such as:

- plant material for propagation
- propagation equipment and tools
- production equipment and tools
- growing media

They must also be able to access suitable propagation environments, such as propagation cases and infrastructure, for growing on. This could include a polytunnel or glasshouse, although some crops can grow unprotected. Learners can access these resources at the centre or in a public or commercial setting.

Learners also need to have access to appropriate software to help them develop their production plan.

Centres delivering this qualification must have suitably qualified staff for each of the subject components. Your centre should already have established processes to ensure staff are appropriately qualified to deliver in this subject area.

Assessors and internal verifiers must hold an industry and/or subject-specific qualification equivalent to the qualification. Centre staff should have relevant industry experience and be able to demonstrate industry-relevant CPD to maintain their subject-specific knowledge and skills.

Approaches to delivery

You can deliver outcome 1, the production plan, alongside the practical elements of outcomes 2, 3 and 4.

You could propagate plants for outcome 2, and then continue growing them in outcome 3, with an applied focus on manipulation to meet outcome 4.

Alternatively, you could grow a different selection of more mature plants, for example, for plant trials, for sale, or for planting out. Learners must grow their crops for a known purpose to make the production meaningful and relevant. Ensure that

you integrate ICT into the relevant parts of the production plan, rather than assessing it separately. Teach plant-identification techniques while working with the plants at propagation and production stages.

Learners learn to propagate and produce a range of crop plants. They can do this in a range of suitable locations; for example:

- a commercial situation
- a college glasshouse
- polytunnel or garden
- a community or public garden

Learners would benefit from visits to a range of production enterprises, and can undertake a work-experience placement in a plant-production context. If appropriate to the context and production techniques carried out, they can watch machinery, such as seed-sowing machines, potting machines or conveyor belts, being used — or indeed use them themselves.

Learners could base their production plan on one crop, which they propagate or produce, so that their decision-making has an impact on the crop's production. Each crop produced should be in a batch of multiple plants of the same variety so that learners can repeat techniques and compare differences in growth. Groups of learners can collaborate to produce a batch.

Approaches to assessment

You can assess learners through a single portfolio, including a production plan and photographic, video or assessor checklist evidence of practical activities. Learners could combine all four outcomes into a single project.

Opportunities for e-assessment

You can use online portfolio software to gather evidence for this unit.

Equality and inclusion

This unit is designed to be as fair and as accessible as possible with no unnecessary barriers to learning or assessment.

You must consider the needs of individual learners when planning learning experiences, selecting assessment methods or considering alternative evidence.

Guidance on assessment arrangements for disabled learners and those with additional support needs is available on the [assessment arrangements web page](#).

Information for learners

Production Horticulture (SCQF level 7)

This information explains:

- what the unit is about
- what you should know or be able to do before you start
- what you need to do during the unit
- opportunities for further learning and employment

Unit information

In this unit, you develop the knowledge and skills you need to produce ornamental, cut flower and edible crops. You learn about production planning, and put this into practice as you learn how to propagate and produce a variety of crops. You also develop skills in information and communications technology (ICT), finance and marketing in the context of planning a commercial crop.

You produce a production plan for a chosen crop that is appropriate for a commercial situation. You propagate a range of plants using various methods and learn how to provide a suitable environment for the propagules. You produce a range of crops by potting on, pruning and caring for batches of plants from a variety of categories. You also learn how to identify a range of plants as you propagate and grow them.

When you complete this unit, you can:

- produce a production plan for a crop
- propagate a range of plants using a variety of techniques
- produce a range of crops
- describe how plant growth and development and plant physiology are manipulated in the production of plants

Prior knowledge and skills

While some previous horticultural knowledge or experience is beneficial, you do not need it to study this unit.

Before you start, we recommend you have completed one or more of the following:

- NC Horticulture at SCQF Level 5, ideally to include some level 6 units
- SVQ Horticulture at SCQF Level 6
- a relevant City & Guilds qualification at level 6
- a minimum of one Scottish Higher at grade C or above, or one A-level at grade D or above
- other equivalent qualifications
- relevant industry experience

Assessment

You are assessed on a series of practical tasks, with your evidence including some written, video or photographic work.

Future progression and employment

If you study this unit as part of HNC Horticulture, you may be able to progress to HND Horticulture, or go directly into employment in the horticulture industry.

Meta-skills

Throughout this unit, you develop meta-skills that are useful for the horticulture sector.

Meta-skills are transferable behaviours and abilities that help you adapt and succeed in life, study and work. There are three categories of meta-skills: self-management, social intelligence and innovation.

Self-management

You develop self-management meta-skills through production planning; by considering your choices about labour, environmental impacts, and health and safety considerations; and by adapting to unpredictable events, such as weather or plant-health issues. You use initiative to make decisions about producing crops.

Social intelligence

You develop social intelligence meta-skills as you work together to produce crops in shared workspaces.

Innovation

You develop innovation meta-skills as you research and design production plans, and select appropriate propagation and production methods from a large range of options.

Learning for Sustainability

Throughout this unit, you have the opportunity to develop skills, knowledge and understanding of sustainability.

You learn about social, economic and environmental sustainability principles and how they relate to the horticulture sector. You also develop an understanding of the [United Nations Sustainable Development Goals](#).

Administrative information

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Superclass: SA

History of changes

Version	Description of change	Date

Please check [our website](#) to ensure you are using the most up-to-date version of this unit specification.

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