

Unit 37: Maintaining the Health and Quality of Turf in Parks and Gardens

Delivery guidance

This is an optional, internally assessed unit that will provide learners with the practical skills and knowledge required to maintain the health and quality of turf in parks and gardens. They will learn how to investigate, plan and carry out maintenance operations to a professional standard and gain an understanding of the impacts on maintenance.

The unit content is concerned with how to recognise different areas of turf in order to plan the maintenance operations for each one. It also includes how to carry out investigations into the key operation requirements, which will involve general maintenance, feeding and irrigation. Learners will be able to identify the correct tools, machinery and equipment required to carry out these tasks.

Positive identification of pests, diseases and disorders along with their impact on turf maintenance will take place in practicals on site and within the classroom for theory-based sessions. This will include the importance of recognising the correct repair or renovation requirements following identification.

Access to suitable turf areas with opportunities for hands-on practical experience is critical to this unit. Learners will be provided with an area of turf so that they can effectively plan the timing of turf maintenance, including key features taught during the theory-based sessions. Learners will then carry out their planned maintenance on the given turf area and review the outcomes of their work, ensuring standards have been met.

Connections with local professionals in the industry (e.g. park rangers or estate gardeners) could be utilised for this unit. They may be able to offer support by facilitating external visits for learners or coming into the centre as guest speakers to discuss their skills and experiences.

Approaching the unit

There needs to be a level of flexibility in the method of delivery and the timing of this unit due to the impact that weather conditions may have on turf maintenance planning. You will need to ensure that learners have access to suitable areas of parks and garden turf, which will be linked to the learner's area of interest in a parkland or an estate garden setting.

Learning aims may be combined, so that theory is taught alongside practical tasks, which would help put the unit into a real-life context for your learners. Other units could be linked where appropriate: for example, you could teach health and safety around the use of tools, equipment and machinery or link the unit content to work experience where learners will work directly with turf.

For learning aim A, learners will gain an understanding of the wide range of turf areas in parks and garden settings (either on or off site). This would enable them to investigate the range of maintenance operations requirements for the different areas, including type, frequency, feeding turf, applications, irrigation methods and the tools, equipment and machinery associated with maintenance tasks (see unit specification).

Accessing local parks and gardens could prove useful here with guest speakers (e.g. park rangers or head gardeners) providing talks on the different maintenance operations that ensure good health and quality of their turf areas.

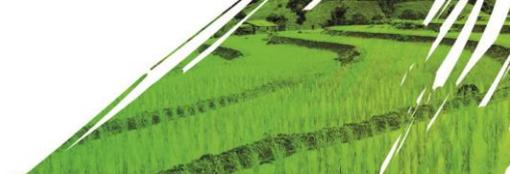


The factors that affect maintenance operations and the health of turf are also an important consideration of this learning aim and learners will need to be able to identify clearly the range of threats to turf health from the unit content. Pests, diseases, disorders and other threats, as well as moss and weed identification and control will be covered, including the impact of these threats and how best to respond to them. Assessment of damage will enable learners to select the most suitable repair or renovation method required that suits the area being maintained. It is advised to use real-life examples where possible.

It is possible to combine the delivery of learning aims B and C so that theory is taught alongside practical tasks. Once learners have gained an understanding of turf maintenance operations and requirements, they will be able to produce an effective plan with key features for their own area of park or garden turf. You could group learners to focus on each turf area, depending on the size of your class and turf area available. However, be aware that it is essential all learners produce their own evidence individually. As previously mentioned, it is also important to consider the seasonal impacts on maintenance planning.

Practical demonstrations will be used to illustrate how to use tools, equipment and machinery safely and assessing the level of risk in an area, before demonstrating how maintenance tasks are to be completed effectively. You need to consider learners' previous experience in this area, as they could help you to demonstrate some practical tasks where appropriate. Ensure that your learners work independently on their maintenance tasks to show their individual skills developing. Learners must also be able to demonstrate they can meet legislative requirements of safe working practices and use of correct personal protective equipment (PPE). This must be demonstrated by staff and learners throughout the unit at all times.

After completing the practical tasks, learners will review the impact, quality and effectiveness of their work, measuring the actual outcomes against planned outcomes. Peer assessment methods should also be encouraged here to assess each other's tasks, encouraging constructive feedback and evaluation.



Assessment model

Learning aim	Key content areas	Recommended assessment approach
A Investigate the maintenance requirements of turf in parks and gardens	A1 Maintenance operations of turf in parks and gardens A2 Factors that affect maintenance operations A3 Repair and renovation requirements of turf in parks and gardens	A report on the maintenance requirements to enhance turf health
B Plan a schedule for an area of turf to support its health and maintenance	B1 Planning turf maintenance for an area of a park or garden B2 Seasonal impacts on maintenance planning for turf in parks and gardens B3 Key features of a turf-maintenance plan	Portfolio of evidence, to include: <ul style="list-style-type: none"> inspection of an area of turf, reporting on its health maintenance plan for an area of turf evidence of maintenance tasks carried out report on the effect of maintenance on the quality of turf
C Carry out maintenance for an area of turf to enhance its health and quality	C1 Preparing to undertake turf maintenance in parks and gardens C2 Completing maintenance tasks C3 Reviewing outcomes of maintenance tasks	

Assessment guidance

This unit is internally assessed with two summative assignments, which will examine learner knowledge through written tasks and competency skills through practical application.

For learning aim A, learners are to write a report providing an accurate account of the maintenance requirements of park and garden turf areas. They will be required to demonstrate both their depth and breadth of understanding of the different requirements of turf areas, and the relationship between specific turf needs and suitable maintenance operations.

In their reports, learners will have to illustrate clear links between different turf areas and their maintenance requirements, detailing the factors that can affect turf maintenance. Using information from their own independent research, learners will make clear connections between the health of turf and its quality and show how regular maintenance will improve turf health. From this, learners will be able to correctly identify any damage and to recommend the appropriate repair and renovation methods.

Learners will, throughout their work, use consistently accurate technical terminology and botanical naming related to threats, pests, diseases, disorders, weeds and moss control. Additional evidence may include video entries, photographic evidence and voice recordings of their investigations.

The second assignment is split into four parts, which will join together to create a portfolio of evidence of learners' practical work. It is essential that learners are provided with a suitable area to carry out the full scope of the unit and produce their own evidence individually, even when they are working within small groups.

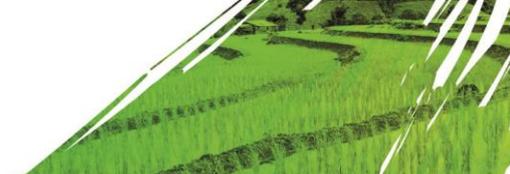


The first part of this assignment focuses on learners carrying out a full inspection of their given park or garden turf area. They will have to consider all relevant aspects that may affect successful maintenance and the health of the turf they are working on. Learners will be required to include full, accurate details of the requirements for successful maintenance and make clear, insightful links to the site conditions.

From their inspections, learners will produce a detailed maintenance plan for the given area with clear aims and objectives meeting the turf requirements. Key features of maintenance plans detailed in the unit content should be included. The plan will be developed either electronically or on paper and will link back to their investigations in the first assignment. The plan will show the weekly maintenance tasks that are to be completed on their turf areas, matching site conditions accurately.

The third part of the assignment will be presented as a series of annotated photographic evidence sheets, risk assessments and observation proformas that show the maintenance being carried out. Learners will explain the tasks and have a depth of knowledge of how the maintenance tasks improve turf health. You will complete the observation proformas that will be included in the portfolio as they will evidence the tasks being carried out to the required standard. This will help to demonstrate the efficient maintenance of the turf area and correct selection and use of tools, equipment and machinery. Learners must also demonstrate a clear consideration of the environment, safe working practices and working to site conditions effectively.

In the final part of the portfolio for this assignment, learners will have to conduct a thorough review of the methods they used for maintaining the health of their turf area. They must be able to reflect on their methods used, what was successful and where they could have improved or carried out any particular methods differently. This could be achieved by using a video recording where learners provide a commentary of their approach and methods used; how they have met the standards after maintenance has been completed; and provide their recommendations for future maintenance. Learners must carry out at least three different maintenance tasks following their own plan and report on each one.



Getting started

This provides you with a starting place for one way of delivering the unit, based around the recommended assessment approach in the specification.

Unit 37: Maintaining the Health and Quality of Turf in Parks and Gardens

Introduction

Learners are introduced to both parks and garden turf and the different uses and maintenance requirements of each. This includes public and recreational parks, green areas, conservation areas, residential gardens and estate gardens.

There are excellent opportunities to develop strong links with local employers during this unit, especially during the introduction, which will enable learners to visit the range of areas listed above. Guest speakers or guided tours will help to support learners' knowledge of the maintenance requirements of different turf areas. They will also offer a chance for learners to observe a range of turf maintenance tools, machinery and equipment in a real-life context.

Learning aim A – Investigate the maintenance requirements of turf in parks and gardens

- For learning aim A1, you could begin by providing a classroom-based introduction to the unit identifying the range of park and garden turf areas. Learners could then carry out an investigation into how maintenance will vary from turf areas that require intensive regular maintenance compared to those areas that require less attention.
- You could arrange visits to local employers, so that learners can look at the requirements of different turf areas. This could include talks from gardeners, managers or park rangers where possible. Learners should be provided with instructions to investigate the different maintenance tasks, methods and frequency required while on these visits, including:
 - mowing
 - scarifying
 - aeration
 - rolling
 - switching/brushing
 - edging
 - feeding of turf, including summer and winter programmes
 - irrigation methods.
- Visits can be arranged throughout the delivery of the unit and should include turf areas that are not available at the centre.
- You could organise a series of practical workshop sessions where you demonstrate how to use tools and equipment correctly and safely. It is important to identify learners' previous experience with tools, equipment and machinery at this stage. Learners must be shown pre-start checks, safe use, personal protective equipment (PPE) to be worn and maintenance of tools, which will include pedestrian machinery, ride-on machinery, hand tools and powered hand tools (see unit specification).
- A practical session on feeding turf and applying feed should be led by the tutor and should cover summer and winter programmes as well as all applications including top dressing, granular and liquid.
- Practical sessions on correct waste removal and disposal could be taught separately so that learners understand the different forms of both organic and inorganic waste and the correct

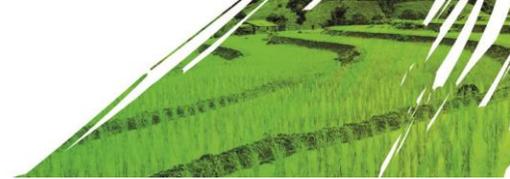


ways to dispose of them. This could include compost heaps, leaf mulch or litter, tree and shrub pruning and shredding, grass cuttings, grass seed and fertilizer sacks, empty chemical bottles and old oil from machinery. You could have a range of waste items available for learners to practice disposing of them correctly.

- For learning aim A2, tutors could facilitate a practical turf inspection of a large area, supplying learners with clipboards and paper to record their findings of threats to turf health. This should include pests, diseases, disorders, weeds and moss. Learners could then carry out an investigation into the correct ways to respond to threats found in different turf areas, including physical, chemical, cultural and biological methods, then create a presentation using PowerPoint, SWAY, an interactive whiteboard or flipchart and deliver it to the class.
- Learners could create an annotated poster on the reasons for leaving turf areas unmaintained. This should include the purpose and importance of unmaintained turf and the potential issues that could arise. Provide learners with the following headings for their posters: spring bulb growth, wildflower areas, around trees, wildlife habitats and newly seeded areas.
- For learning aim A3, learners could take part in a series of practical tasks where they can assess real-life turf areas (either on or off site) for any damage, such as diseased areas, wear and tear, machinery damage, flooding or drought, before providing a recommendation of the types of repair and/or renovation methods required (patching, plugging, over-seeding, forking-up, re-edging, re-turfing, re-seeding). If a practical session is not possible, you could provide learners with case studies so that they can perform their analysis. When selecting the correct repair or renovation method learners must take into account the factors that may affect maintenance operations, including the soil type and condition, grass type, timings, methods used and weather. You could ask them to produce a report consisting of an assessment of the areas requiring repair/renovation along with any factors which will affect the work and how to get around these/work with them.
- As a formative assessment activity, learners could produce grass profile sheets with information on five different grass types. This should include: full botanical names and common names, areas most suited for a grass type, including soil types and aspects and photographic evidence.

Learning aim B – Plan a schedule for an area of turf to support its health and maintenance

- For learning aim B1, you could facilitate a class discussion about recognising the characteristics of different turf areas and how to set aims and objectives for maintaining the health of turf.
- You could deliver a classroom-based session on meeting quality standards of turf and how to plan for maintenance, repair and renovation. You could then introduce a range of different planning documents with blank copies for learners to complete.
- Research tasks could be set for learners to investigate the range of legislation they will be working to when working with turf (see LAB1). You could then select one piece of legislation each for learners to produce a fact sheet that could be displayed in the classroom.
- For learning aim B2, learners could be shown a range of weather-related video clips from good video sharing websites, including extreme weather, which can then be followed by a full class discussion on how seasonal impacts might affect their planning (e.g. operations, climate, aspect and soil).
- Learners could be set a research task on long- and short-range weather forecasts to support their work planning. This could include online weather reports, TV weather forecasts and weather apps for mobile phones. Learners could then debate the best way to predict weather. Once the best method has been decided by the class, learners could report on the recent maximum and minimum temperatures and what effect these would have on turf growth and maintenance planning.



- For learning aim B3, you could use a graphical organiser (such as a cloud burst or spider diagram) and ask learners to state the key features of a turf maintenance plan. Learners could then share their ideas and discuss as a class (see unit specification) so that a comprehensive list is achieved with minimal tutor input.
- You could organise a practical activity where learners are provided with their own area of park or garden turf to start planning and carrying out maintenance tasks. Learners may need to work in small groups, but it is critical that they individually produce their own evidence. Using the list outlined in the unit specification, which could be given as a handout, learners are to create a draft plan of the maintenance requirements of their own turf area.
- You could facilitate classroom-based sessions where learners decide on a format for their maintenance plan (either using IT or writing by hand), justifying its use: learners can choose different formats to each other. Once confirmed, learners should then fully plan and produce the maintenance of their own turf area in their chosen document format (e.g. diaries, wall planners, spreadsheets).

As a formative assessment activity, learners could present their plans verbally to demonstrate a clear understanding of using planning documents to plan maintenance on their turf areas and to gain feedback on any improvements that may be required.

Learning aim C – Carry out maintenance for an area of turf to enhance its health and quality

- For learning aim C1, you could facilitate a classroom-based session on assessing risks relating to practical tasks. Learners could be shown *YouTube* clips on the difference between a hazard and a risk (go to *YouTube* and search for 'the difference between hazards and risks') and present information on the importance of carrying out risk assessments before completing practical tasks. Example risk assessments could be shown to learners before they are given blank templates to complete on their own. Learners should write a detailed risk assessment for their own area of turf that they will be maintaining and include tools, equipment, machinery, people and area that they are working in. Learners should also list the PPE required for tasks planned.
- Before practical sessions, learners should assess and discuss the ground and weather conditions for the task planned, explaining why this should or should not take place.
- For learning aim C2, facilitate a series of practical sessions where learners will carry out turf maintenance to suit the area given and follow the tasks on their maintenance plans. Learners must carry out at least three maintenance activities from their plans that also match the time of year in which the practical sessions take place. Learners will have to demonstrate continuous safe working practices, as well as select and safely use the correct tools and equipment. This includes pre-start checks and post-use maintenance; minimise environmental damage while working; leaving the work clean and tidy after use; and correctly dispose of organic and inorganic waste. You will complete written observation records for each task and ensure that learners take photographs and/or videos recordings throughout.
- Learners should complete a practical-based review of the turf area after each maintenance task, using video recording against the aims, objectives and standards of the original plan. Learners should explain the impact of maintenance on their turf area and make recommendations for future maintenance in their recordings. The review will include:
 - checking that standards meet basic recreational use
 - checking that the requirements of the turf area are met with grass cover, weed removal, improved health, etc.
 - effectiveness of the maintenance tasks (including growth improvements)



- quality improvements (i.e. checking that the aims and objectives have been met)
- recommended further improvements, including lessons learned, recording results on the maintenance plan, etc.
- As a formative assessment activity, learners could produce a storyboard poster of one of their practical maintenance tasks. This should include a series of photographs from the beginning of the task with 'before' pictures and tool selection, to the end where they leave the site presentable having correctly disposed of all waste. Photographs should be annotated to explain each part of the task.



Details of links to other BTEC units and qualifications, and to other relevant units/qualifications

This unit links to:

- Unit 4: Developing a Land-based Enterprise
- Unit 23: Land-based Machinery Operations
- Unit 32: Maintenance of Sports and Amenity Turf
- Unit 33: Pests and Disease in Plants.

Resources

In addition to the resources listed below, publishers are likely to produce Pearson-endorsed textbooks that support this unit of the BTEC Internationals in Agriculture/Horticulture/Land-based subjects. Check the Pearson website (<http://qualifications.pearson.com/endorsed-resources>) for more information as titles achieve endorsement.

Textbooks

Hessayon D G, *The Lawn Expert* (2nd edition), Expert, 1997 ISBN 9780903505482 – an easy-to-follow book that identifies grass types and general maintenance requirements

Videos

Search *YouTube* for a range of locally relevant turf care, weather and risk assessment videos to support the teaching of this unit (search 'turf care', 'turf care and weather'). Also search for 'the difference between hazard and risk' for videos that look at what these are, why they are important and why risk assessment is so important.

Websites

ishs.org – International Society for Horticultural Science

ipps.org – international association of plant production professionals

www.gardenlines.co.uk – turf care information and articles

www.hse.gov.uk – Health and Safety Executive (HSE) – website provides essential information on stay safe in the workplace

www.rhs.org.uk – The Royal Horticultural Society (RHS) – website provides information on weeds, pests, diseases and turf care

Pearson is not responsible for the content of any external internet sites. It is essential for tutors to preview each website before using it in class so as to ensure that the URL is still accurate, relevant and appropriate. We suggest that tutors bookmark useful websites and consider enabling students to access them through the school/college intranet.