

# Unit 19: Manage Winter and Summer Sports Turf Surfaces

<b>Unit code:</b>	<b>J/600/9859</b>
<b>QCF Level 3:</b>	<b>BTEC National</b>
<b>Credit value:</b>	<b>10</b>
<b>Guided learning hours:</b>	<b>60</b>

## ● Aim and purpose

This unit aims to provide learners with an understanding of the principles of management of winter and summer sports turf and how these can be put into practice. This unit is primarily aimed at learners within a centre-based setting looking to progress into the sector or to further education and training.

## ● Unit introduction

As participation in sport continues to grow, the requirement for good quality sports turf has increased for winter and summer use.

The range of sports which are played on turf is very broad and includes football, Gaelic football, tennis, rugby, hockey, polo, cricket, golf, croquet, horse racing and athletics.

This unit focuses on developing and improving learner understanding of sports turf management and also their practical abilities in managing and maintaining both winter and summer sports turf.

On completion of the unit learners will have a clear understanding of performance quality standards (PQS) in relation to sports turf surfaces. They will be able to manage and maintain a range of winter and sports turf in relation to the recommended quality standard, which can range from a recreational right through to a major sports facility. Learners will consider and implement these standards and will focus specifically on adequate grass cover, weed control, level of area, irrigation, and drainage.

Practical operations are a key factor in the management of sports turf and learners will be taught how to evaluate a range of maintenance programmes for different types of sports surfaces, including the production and implementation of work programmes. This will cover determining and monitoring the quality of sports turf, including benchmarking and governing body requirements.

## ● Learning outcomes

**On completion of this unit a learner should:**

- 1 Be able to manage winter and summer sports turf surfaces to performance quality standards (PQS)
- 2 Understand the management of winter and summer sports turf surfaces to performance quality standards
- 3 Be able to evaluate maintenance operations and their contribution to overall quality
- 4 Understand how to determine the level of quality of sports turf surfaces.

# Unit content

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## 1 Be able to manage winter and summer sports turf surfaces to performance quality standards (PQS)

*Maintenance operations and material inputs:* mowing; scarification; aeration; top dressing; over-seeding; fertiliser; related resources eg labour, rolling, switching, brushing, marking, nutrition, irrigation, pest, disease and weed control; health and safety; risk assessment; personal protective equipment (PPE); environmental good practice (minimisation of impacts); calendar of work (timings, objectives, operations, resources needed); resource file (personnel, materials, equipment, machinery and finances)

*Performance quality standards:* high (national and international use), standard (club use) and basic (recreational use); adequate grass cover; low level of weed coverage; surface level and the ability to maintain water including irrigation

## 2 Understand the management of winter and summer sports turf surfaces to performance quality standards

*Management of winter and summer sports surfaces:* weather and climate (forecast, average weather conditions, precipitation, shade, frost, maximum and minimum temperatures, air movement, extreme weather events, influence on turf management); calendar of work (timings, objectives, operations, resources needed); risk assessments

*Performance quality standards:* include herbage; pests and diseases; profile; presentation and playing quality

## 3 Be able to evaluate maintenance operations and their contribution to overall quality

*Sports turf surface types:* winter games pitch eg football, rugby, hockey; extensive area eg sports fields, golf fairways and race courses; fine turf surface, eg bowls, golf greens, cricket, croquet; surface requirements and cultural requirements including any links between provision; review of material inputs and maintenance operations

*Maintenance operations and material inputs:* mowing; scarification; aeration; top dressing; over-seeding; fertiliser; related resources eg labour; rolling; switching; brushing; marking; nutrition; irrigation; pest, disease and weed control; health and safety

*Legislative requirements:* eg Health and Safety at Work Act 1974, Control of Substances Hazardous to Health (COSHH), Provision and Use of Work Equipment Regulations (PUWER), Control of Pesticides Regulations

*Overall quality:* monitoring of management, material inputs including herbage; pests and diseases; data collection and interpretation; profile; presentation and playing quality; type of turf maintained - high, standard and basic

#### 4 Understand how to determine the level of quality of sports turf surfaces

*Level of quality:* benchmarking; performance quality standards (high, standard, basic); factors that determine quality and presentation of sports turf surfaces eg structural requirements, grass species, root depth, evenness, pests and disorders, appearance, sport impacts; benefits of using PQS eg inform maintenance and resource requirement, inform carrying capacity of turf, efficient use of materials/resources; governing body and legislative requirements; governing organisations for the various turf surfaces plus professional bodies influence eg Sports Turf Research Institute (STRI), Institute of Groundsmanship (IOG), Institute of Leisure and Amenity Management (ILAM), England and Wales Cricket Board, the Football Association

## Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
<b>P1</b> collect PQS data and assess the level of quality of a sports turf surface	<b>M1</b> explain the importance of collecting accurate PQS data	<b>D1</b> discuss the role of governing bodies and professional organisations in relation to the implementation and monitoring of PQS
<b>P2</b> produce a calendar of work for a sports turf surface to manage it to a stated level of quality		
<b>P3</b> produce a resource file of personnel, materials, equipment machinery and finances for a sports turf surface		
<b>P4</b> carry out management activities on a sports turf surface	<b>M2</b> explain how PQS tables can be used to ensure surface requirements for selected sports surfaces	<b>D2</b> discuss the role of benchmarking and PQS on the management of sports turf surfaces
<b>P5</b> explain why the soil ecosystem must be assessed before producing a calendar of work		
<b>P6</b> evaluate management strategies which can reduce the effects of wear on specific sports turf surfaces	<b>M3</b> explain the management of high, standard and basic quality standards, drawing on relevant examples	<b>D3</b> evaluate how governing body and legislative requirements influence the management of sports turf recommending how this could be monitored.
<b>P7</b> explain why weather and climate conditions should be monitored when managing sports turf surfaces		
<b>P8</b> explain how a calendar of work and resource file contribute to the management of surfaces to a stated quality		

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
<b>P9</b> monitor mowing practice and other operations on specific sports turf surfaces and evaluate how each is contributing to the quality		
<b>P10</b> monitor and evaluate material inputs and how each is contributing to the quality of a specific sports turf surface		
<b>P11</b> collect data and assess the overall quality of sports turf surfaces	<b>M4</b> compare the management of different sports surfaces.	
<b>P12</b> summarise the legislation and codes of practice relating to the management of sports turf surfaces		
<b>P13</b> evaluate the benefits of using PQS to assess the level of quality of a turf surface		
<b>P14</b> explain how to distinguish between the different levels of quality for specific sports turf surfaces and decide which is acceptable		
<b>P15</b> explain the purposes of reviewing material inputs and maintenance operations.		

**PLTS:** This summary references where applicable in the pass criteria, in the square brackets, the elements of the personal, learning and thinking skills. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

Key	IE – independent enquirers CT – creative thinkers	RL – reflective learners TW – team workers	SM – self-managers EP – effective participators
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# Essential guidance for tutors

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## Delivery

Delivery of this unit will involve practical assessments, written assessment, visits to suitable collections and will link to work experience placements.

The use of as wide a range of techniques as possible is essential and could include lectures, seminars, site visits, turf management practicals, and internet and/or library-based research. Delivery should stimulate, motivate, educate and enthuse learners and utilise the framework of personal, learning and thinking skills.

In relation to work placements it needs to be stipulated that the placement must involve learners in managing turf surfaces and not just maintaining them. Work placements need to be monitored regularly to ensure the quality of the learning experience. It would be beneficial if learners and supervisors were made aware of the requirements of this unit and the assessment procedures to be used before the placement begins. This allows work to be scheduled in accordance with the unit and ensures that learners have the opportunity to carry out management procedures and be involved in the implementation and planning of work schedules, so that naturally occurring evidence can be collated at the time. Evidence should be gathered using observation records and witness statements and it is also recommended that learners keep an up-to-date diary. Guidance on the use of observation records and witness statements is provided on the Edexcel website.

Safe working practices are essential, whichever delivery methods are chosen, and it is essential that tutors stress the importance of safe working practices, legal obligations and effective management in ensuring turf maintenance operations have a minimal adverse impact on the environment.

Health and safety during both classroom and practical activities must be stressed and it is essential that full risk assessments are undertaken before any practical activity.

Tutors should consider integrating the delivery, private study and assessment for this unit with other relevant units and assessment instruments learners are taking as part of their programme of study.

Learning outcomes 1 and 2 are directly linked, as are learning outcomes 3 and 4.

Learning outcomes 1 and 2 are likely to be delivered through formal lectures, demonstration, site visits, practical sessions and independent learner research. Learners will initially be taught about quality standards through lectures, and environmental impact and health and safety legislation will be emphasised. This will then lead to learner research and practical activities regarding gathering and collating information in relation to PQS.

Lectures and talks by representatives from governing bodies and professional organisations will serve to encourage, interest, motivate and enthuse learners. A sufficient number of visits to a range of winter and summer sports turf facilities will also be required in order for learners to observe how PQS are implemented and managed.

Access to IT facilities is also essential and the use of laptops or other mobile devices, which can be used outside for gathering information, should be encouraged.

Learning outcomes 3 and 4 are likely to be delivered using a combination of lectures, learner research, site visits and practical management opportunities. It is essential that learners undertaking this unit have suitable workplace placements, which should be set up before delivery of learning outcomes 3 and 4, and/or access to suitable sports turf facilities on or near the centre site so that they ample opportunity to participate in turf management techniques. In addition, there must be sufficient trips to the full range of winter and summer sports turf facilities to ensure that learners cover the full range of sports turf management. However, as with all practical activities and visits, health and safety must be emphasised and full risk assessments undertaken before both practical activities and visits. Also environmental impact should be stressed while planning and undertaking any management tasks.

Visiting expert speakers could add to the relevance of the subject for learners. For example, a head greenkeeper/course manager/leisure manager could talk about their work, the problems they face and the methods they use to resolve them.

## Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan gives **an indication of the volume of learning it would take the average learner** to achieve the learning outcomes. It is **indicative and is one way of achieving the credit value**.

Topic and suggested assignments/activities and/assessment
Introduce and overview of the unit.
<b>Assignment 1: Collection of Data</b> (P1, P10, P11, M1, D1)
Tutor introduces the assignment brief.
Theory session: winter and summer sports turf, PQS and governing bodies and professional organisations.
Visiting speakers from governing bodies and professional organisations.
Site visits to various sports turf facilities.
Learner research and practical activities.
<b>Assignment 2: Management of Winter and Summer Sports Turf</b> (P2, P5, M2, D3)
Tutor introduces the assignment brief.
Theory session: compilation of work programmes using PQS and legislation relevant to sports turf maintenance operations.
Practical activity using a sports turf facility: gathering and collating information.
IT/internet use: preparing work schedules as per assignment from information gathered.
<b>Assignment 3: Quality and Resource Management</b> (P3, P12, M3, D3)
Tutor introduces the assignment brief.
Theory session: maintaining records and overall quality of sports surfaces maintenance operations.
Site visits to various sports turf facilities.
Visiting speakers: head greenkeepers, course manager, leisure manager.
Practical resource management and evaluation of sports surfaces using centre sports facilities and work experience providers.
<b>Assignment 4: Practical Management of Winter and Summer Sports Turf</b> (P4, P6, P7, P8, P9, P13, P14, P15, M4, D2)
Tutor introduces the assignment brief.
Theory: measuring, evaluating and implementing quality systems.
Work experience: management of sports turf.
Unit review.

## Assessment

For P1, learners must collect performance quality standard data and assess the level of quality of a sports turf surface. Tutors should identify the sports surfaces or agree them through discussion with learners. Where possible, to ensure assessment is fair, the size and complexity of the task should be the same for all learners. P1 could be assessed by the tutor during practical sessions. If this format is used then suitable evidence from guided learning activities would be observation records completed by learners and tutor.

For P2, learners are required to produce a calendar of work for a sports turf surface to manage it to a stated level of quality. Tutors should identify the sports turf surfaces or agree them through discussion with learners. Where possible, to ensure assessment is fair, the size and complexity of the task should be the same for all learners. As a minimum learners should provide evidence covering one winter and one summer sports turf surface. Necessary management operations, resource requirements and appropriate frequency/timings must be included. Evidence could take the form of a pictorial presentation with notes (possibly using appropriate software), an annotated poster or project. Alternatively, it could be linked with P3.

For P3, learners must produce a resource file of personnel, materials, equipment, machinery and finances for a sports turf surface. Tutors should identify the sports turf surfaces or agree them through discussion with learners. Where possible, to ensure assessment is fair, the size and complexity of the task should be the same for all learners. As a minimum learners should provide evidence covering one winter and one summer sports turf surface. Evidence could take the form of a pictorial presentation with notes (possibly using appropriate software), or a project and it could be linked to P2.

For P4, learners are required to carry out activities on a sports turf surface. Tutors should agree with learners before the task is set where they will be carrying out their practical activity. Tutors, where possible, should ensure that the size and complexity of the task is the same for all learners. This task could be undertaken during work experience or observed on a sports surface by the tutor. If this format is used then suitable evidence from guided learning activities would be observation records completed by learners and tutor or learners and work experience provider, which can then be tied into a project or presentation using suitable software.

P5, P6, P7, P8, P12, P13, P14 and P15 could be assessed through the production of a sports turf report of assignment. P8 could link to the evidence produced for P2 and P3.

P9, P10 and P11 involve quality systems and data collection and could be linked to P1 and the same assessment methods used.

For M1, learners must explain the importance of collecting accurate PQS data. This could be covered by questioning learners during practical sessions and linked to P1

For M2, learners must explain how performance quality standard tables can be used to ensure surface requirements for selected sports surfaces, and this should be linked to P2. Evidence could be presented as an explanatory leaflet, poster or as a report.

For M3, learners are required to explain the management of high, standard and basic quality standards, drawing on relevant examples. Each learner will be required to draw on two examples of each, including one winter and one summer sports surface, and this should be agreed in advance with the tutor. Evidence could be presented in the same format as for P3.

For M4, learners must compare the management of different sports surfaces. This must include information on how surface and cultural requirements can differ but also be linked with different sports surfaces. Evidence could be presented in a report and this could be linked to P3 with examples from learners' work experience placements.

For D1, learners are required to discuss the role of governing bodies and professional organisations in relation to the implementation and monitoring of PQS. Evidence could be presented within a report or through tutor/learner discussion with the evidence being recorded on an observation sheet. Whatever method is chosen

the task size and complexity need to be the same for all learners, and the number of governing bodies and professional organisations needs to be agreed between the tutor and learner, but there must be a minimum of two of each.

For D2, learners will discuss the role of benchmarking and performance quality standards on the management of sports turf surfaces. This could be linked with M2 and evidence can be presented in the same way.

For D3, learners need to evaluate how governing body and legislative requirements influence the management of sports turf, and make recommendations as to how this would be monitored and for improvements to be made within the calendar of work. The governing bodies should be the same as identified in D1 and evidence should be presented using the same methods as for D1.

### Programme of suggested assignments

The following table shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1, P10, P11, M1, D1	Collection of Data	You are a sports turf manager and you are required to assess the quality of play of your sports turf surfaces for a variety of different sports turf by collecting PQS information and analysing the importance of it. You are also required to identify the governing bodies and professional organisations involved with sports turf and evaluate and discuss their role in relation to Performance Quality Standards.	Observation records. Written.
P2, P5, M2, D3	Management of Winter and Summer Sports Turf	The task can be linked to Assignment 1 as, after collecting and analysing your data, you are now required to produce a calendar of work for the management of the sports turf surfaces incorporating any governing body and legislative requirements. Use PQS tables to ensure surface requirements for the sports turf surfaces you are responsible for.	Written.
P3, P12, M3, D3	Quality and Resource Management	As a sports turf manager you are required to produce a resource file for a range of quality sports turf surfaces under your remit and any management controls, and this could be linked to the scenario for Assignments 1 and 2.	Written.
P4, P6, P7, P8, P9, P13, P14, P15, M4, D2	Practical Management of Winter and Summer Sports Turf	As part of practical activities for your work experience you are required to carry out a range of activities and research linked to sports turf management.	Observation records. Written.

## Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit forms part of the BTEC Land-based sector suite. This unit has particular links with:

Level 2	Level 3
Maintain Winter and Summer Sports Turf Surfaces	L20 Plan the maintenance of sports turf areas
Understand the Principles of Sports Amenity Turf Maintenance	Undertaking Land-based Machinery Operations
	Understand the Principles of Advanced Horticultural Science
	Construct and Establish Sports and Amenity Turf Areas

### Essential resources

Learners will need access to the appropriate environment or facilities and equipment required to carry out the activities.

### Employer engagement and vocational contexts

In order to deliver this unit it is essential that centres have close links with winter and summer sports turf providers, in order that visits can be arranged, work placements organised and guest lecturers utilised.

Also centres need to create and develop links with governing bodies and professional organisations and learners need to be encouraged to join as student members. Speakers, technical information and workshops could be used.

### Indicative reading for learners

#### Textbooks

Arthur J – *Practical Greenkeeping* (Kyodo Printing Co, 1997) ISBN 978-0907583042

Beard J – *Turf Management for Golf Courses Second Edition* (An Arbor Press, 2001) ISBN 978-1575040929

Brown S – *Sports Turf and Amenity Grassland Management* (Crowood Press, 2005) ISBN 978-1861267900

Perris J and Evans R – *The Care of the Golf Course Second Edition* (Sports Turf Research Institute, 1996) ISBN 978-1873431191

#### Journals

*The Greenkeeper*

*The Groundsman*

*Horticulture Week*

*Turf Professional*

## Websites

[www.bigga.org.uk](http://www.bigga.org.uk)

The British and International Golf Greenkeepers Association

[www.hse.gov.uk](http://www.hse.gov.uk)

Health and Safety Executive

[www.iog.org](http://www.iog.org)

The Institute of Groundsmanship

[www.pitchcare.com](http://www.pitchcare.com)

Pitchcare

[www.stri.co.uk](http://www.stri.co.uk)

The Sports Turf Research Institute

[www.the-gtc.co.uk](http://www.the-gtc.co.uk)

The Greenkeepers Training Committee

## Delivery of personal, learning and thinking skills (PLTS)

The following table identifies the PLTS opportunities that have been included within the assessment criteria of this unit:

Skill	When learners are ...
<b>Independent enquirers</b>	analysing and evaluating performance quality standard information
<b>Creative thinkers</b>	generating ideas and exploring possibilities while creating a calendar of work
<b>Reflective learners</b>	analysing their performance while participating in work experience and practical activities and identifying strengths and areas for improvement analysing the calendar of work and identifying improvements
<b>Team workers</b>	working with others and taking responsibility while carrying out management activities on a sports surface
<b>Self-managers</b>	producing a resource file, organising time and resources while working towards set goals and tasks
<b>Effective participators</b>	monitoring and evaluating the maintenance of sports turf surfaces and investigating and recommending improvements and changes in practice for different surfaces.

Although PLTS opportunities are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

Skill	When learners are ...
<b>Independent enquirers</b>	researching PQS tables investigating PQS data
<b>Creative thinkers</b>	applying and exploring ideas while undertaking work experience
<b>Reflective learners</b>	assessing their and others' ability to gather and record information and required data
<b>Team workers</b>	working with others to achieve common goals during practical and work experience activities
<b>Self-managers</b>	organising and prioritising tasks while researching and collating information
<b>Effective participators</b>	participating in activities and applying knowledge and understanding learned from other lessons and activities while on work experience.

## ● Functional skills — Level 2

Skill	When learners are ...
<b>ICT – Use ICT systems</b>	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	using the internet to research information and data required for the management of sports turf gathering and recording information collected during practical activities producing work calendars and resource file data
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	
Manage information storage to enable efficient retrieval	
Follow and understand the need for safety and security practices	
Troubleshoot	
<b>ICT – Find and select information</b>	
Select and use a variety of sources of information independently for a complex task	
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	
<b>ICT – Develop, present and communicate information</b>	
Enter, develop and format information independently to suit its meaning and purpose including: <ul style="list-style-type: none"> <li>• text and tables</li> <li>• images</li> <li>• numbers</li> <li>• records</li> </ul>	
Bring together information to suit content and purpose	
Present information in ways that are fit for purpose and audience	
Evaluate the selection and use of ICT tools and facilities used to present information	
Select and use ICT to communicate and exchange information safely, responsibly and effectively including storage of messages and contact lists	

Skill	When learners are ...
<b>Mathematics</b>	
Understand routine and non-routine problems in a wide range of familiar and unfamiliar contexts and situations	assessing and evaluating finances for sports turf surfaces while compiling information for their resource file using mathematical analysis while investigating sports turf surfaces and using performance quality standard tables
Identify the situation or problem and the mathematical methods needed to tackle it	
Select and apply a range of skills to find solutions	
Use appropriate checking procedures and evaluate their effectiveness at each stage	
Interpret and communicate solutions to practical problems in familiar and unfamiliar routine contexts and situations	
Draw conclusions and provide mathematical justifications	
<b>English</b>	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	producing and presenting pictorial and written presentations and being involved in a range of discussions with other learners and tutor
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	reading and gathering information analysing and understanding information in order to complete the tasks given within the assignments.
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	