

# Unit 30: Equipment and Facilities for Outdoor and Adventurous Activities

<b>Unit code:</b>	<b>M/600/2274</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 investigates the equipment and facilities available to participants of outdoor and adventurous activities.

## ● Unit introduction

Equipment is of vital and, at times, life-saving importance to those who choose to undertake outdoor and adventurous activities.

The ease of use of a balanced ice axe, the smooth operation of a belay device, the warmth of a down jacket or the shelter provided by a quality mountain tent are well understood by those who have relied on these items in adverse conditions.

This unit examines the equipment and facilities relevant to learners' chosen outdoor and adventurous activities. It is best approached by a mix of practical and theory-based sessions so that actual equipment and facilities can be thoroughly examined and evaluated as to their design, function and use.

Learners should be exposed to as wide a selection of equipment as possible and be able to familiarise themselves with their use, determining strengths and weaknesses as well as fitness for purpose.

Learners should be able to maintain and store equipment commonly used in outdoor and adventurous activities. Learners will be expected to look at testing methods, guidance and legislation relevant to equipment and facilities. Current developments in equipment and facilities for outdoor and adventurous activities are also covered.

## ● Learning outcomes

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

- 1 Know about equipment and facilities used in outdoor and adventurous activities
- 2 Be able to use equipment used in outdoor and adventurous activities
- 3 Know about recent developments in equipment and facilities for outdoor and adventurous activities
- 4 Be able to test and maintain equipment for outdoor and adventurous activities.

## Unit content

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### 1 Know about equipment and facilities used in outdoor and adventurous activities

*Equipment:* types eg clothing, footwear, technical equipment, safety equipment, teaching and instructing aids, situational or site specific; materials eg natural, man-made, construction (baffle, quilted, seam-closure cast, forged); properties and characteristics eg capacity, accessibility, structure; functions eg travel (kayaks, mountain bikes, boots), weatherproofing, warmth, safety (climbing protection aids, helmets, harnesses)

*Facilities:* eg climbing walls, white-water courses, ski slopes, ropes courses; location eg geography, indoor, outdoor; size and scale; purpose; procedures for access and egress; health and safety

### 2 Be able to use equipment used in outdoor and adventurous activities

*Equipment:* types eg clothing, footwear, technical equipment, safety equipment, teaching and instructing aids, situation specific, site specific

*Use:* related legislation eg health and safety; related regulations eg personal protective equipment (PPE), European conformity (CE); guidelines eg manufacturer, governing body, Health and Safety Executive (HSE), associations, industry bodies; working practice eg related to operation, dismantling, storage

### 3 Know about recent developments in equipment and facilities for outdoor and adventurous activities

*Developments:* eg mass uptake in lightweight equipment for mountaineering and hill-walking, incorporation of fabrics and coatings to assist in minimising UV exposure in clothing, increased uptake in use of trekking poles to aid walking and minimise impact, changes in kayak design for play boating and creeking, increased use of light emitting diodes (LED) in outdoor lighting systems, developments in materials for soft shell clothing, use of global positioning systems (GPS), increase in size and availability of indoor man made snow slopes and climbing walls, new mountain and watersports such as speed gliding and kite surfing

### 4 Be able to test and maintain equipment for outdoor and adventurous activities

*Equipment:* eg indoor, outdoor, personal, group, technical

*Test:* eg procedures, systems, organisations, validity, legislation; recording and reporting; monitoring eg use and abuse, wear and tear

*Maintain:* eg centre-specific protocols and procedures, manufacturers' guidelines and recommendations, shelf-life, legislation, recording and reporting

## 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> describe three different types of equipment used in outdoor and adventurous activities	<b>M1</b> explain three different types of equipment used in outdoor and adventurous activities	<b>D1</b> evaluate three different types of equipment used in outdoor and adventurous activities
<b>P2</b> describe two different types of facility used for outdoor and adventurous activities		
<b>P3</b> demonstrate the correct use of three different types of equipment used in outdoor and adventurous activities, with tutor support [SM2, SM3]	<b>M2</b> independently demonstrate the correct use of three different types of equipment used in outdoor and adventurous activities	
<b>P4</b> describe two recent developments in equipment, or facilities, for outdoor and adventurous activities [IE4, IE2]	<b>M3</b> explain two recent developments in equipment, or facilities, for outdoor and adventurous activities	<b>D2</b> evaluate two recent developments in equipment, or facilities, for outdoor and adventurous activities.
<b>P5</b> demonstrate appropriate procedures for testing and maintaining three different pieces of equipment used in outdoor and adventurous activities, with tutor support. [IE1, SM2, SM3, EP4]	<b>M4</b> independently demonstrate appropriate procedures for testing and maintaining three different pieces of equipment used in outdoor and adventurous activities.	

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

<b>Key</b>	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

This unit is best delivered through a mixture of practical and theory sessions, with an emphasis on 'hands-on' experience and use of a wide range of equipment.

Learners need access to a full range of specialist equipment and facilities or at least those used in teaching the other practical units within this qualification. Industry links with equipment manufacturers, designers, testers and retailers is advisable as their expertise will aid the teaching of the unit.

Visits to specialist facilities should be encouraged, so that learners can investigate and discuss the changing nature of equipment and facilities. Integration of this unit with other 'practical' units could also be useful to learners.

Knowledge of different equipment and facilities can be gained through 'technical' briefings that may naturally occur when introducing a specific activity, with some expansion relating to the structure, materials and limitations of use of the item(s). Background reading of suitable sources of information will reinforce learners' understanding of equipment for outdoor and adventurous activities.

When visiting or using outdoor and adventurous facilities a similar approach can be adopted, albeit with site-specific information. For example, pertinent factors relating to the development of the facility or the technology it uses.

As part of this unit and also within other units as part of this qualification, learners will naturally learn how to use equipment when participating in outdoor and adventurous activities. Good practice in using the equipment should be emphasised at every opportunity.

Developments in equipment and facilities should be delivered through a variety of means. Frequent perusal of outdoor press and websites will augment the theoretical sessions along with input from suitably qualified and recently experienced outdoor staff. Allied with a programme of visits to, or guest speakers from retail or production outlets for outdoor or adventurous equipment, this will help make delivery current and interesting.

Methods and techniques used to maintain equipment can be delivered via a number of 'technical' briefings that may occur when introducing a specific activity, with some expansion relating to the cleaning, care and storage of the item(s).

Testing equipment may seem more problematic for those centres without good industrial contacts. However, the adoption of a system to estimate wear of waterproofs, tent lifespan, rope lifespan under conditions of use or other such procedures will dovetail with the 'maintenance' aspect of this unit. The recording of wear, use, lifespan or replenishment of the most common items of outdoor equipment can easily be utilised to become 'test' protocols. A simple example would be the task of using different cooking stove types and fuels to boil an amount of water, under similar environmental conditions. The inquisitive and imaginative outdoor professional will be able to source and adapt numerous similar examples.

## 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 demonstrates one way in planning the delivery and assessment of this unit.

Topic and suggested assignments/activities and/assessment
Introduction and overview of the unit
<b>Assignment 1: Discover a Range of Outdoor Equipment and Facilities (P1, M1, D1, P2).</b> Tutor introduces the assignment brief
Explore a range of outdoor equipment: practical sessions with a chance to inspect and handle a variety of items that may be used by learners during adventurous outdoor activities
Visit to two outdoor facilities and explore the range of opportunities and experiences they provide
Personal study using available resources to identify and understand new and developing technologies in outdoor equipment and facilities
<b>Assignment 2: Using Outdoor Equipment (P3, M2, P4, M3, D2).</b> Tutor introduces the assignment brief
Practical experience, select and use a range of outdoor equipment: learner practical tasks
Practical session: use of appropriate maintenance procedures for outdoor activity equipment
<b>Assignment 3: Testing Outdoor Equipment (P5, M4).</b> Tutor introduces the assignment brief
Research into the reasons and requirements for testing and legislation applicable to outdoor activity equipment. Group work in pairs to report back findings on specific items
Design a testing procedure and carry it out recording results
Review of unit and assessment activities

## Assessment

For P1, learners must describe three different types of equipment used in outdoor and adventurous activities. Appropriate examples include footwear, clothing, safety and technical equipment. The description should include detail on the materials used for the equipment, properties, characteristics and the function of the equipment.

For P2, learners need to consider the facilities used in outdoor and adventurous activities, and provide a description of two different facilities. Appropriate examples include climbing walls, ski-slopes and white water courses. The descriptions should include details of the location of the facilities, their size/scale, their purpose, procedures for access and egress and health and safety.

For P3, learners must, with tutor support, demonstrate the correct use of three different types of equipment used in outdoor and adventurous activities. For example, technical equipment, safety equipment, and teaching aids. Correct use could be evidenced by video and witness testimony, and must comply with legislation, regulations, guidelines and working practice.

For P4, learners must describe two recent developments in equipment or facilities (they do not have to do one of each) for outdoor and adventurous activities. Suitable developments range from specific developments in materials used in the manufacturing of clothing to the use of new technologies such as LEDs in lighting systems. A wide range of examples of developments is offered in the *Unit content*.

Criterion P5 relates to the testing and maintenance of equipment. Learners are required to demonstrate, with tutor support, appropriate procedures for the testing and maintenance of three different pieces of equipment used in outdoor and adventurous activities. Testing may mean correct checking methods, ie of climbing/caving ropes.

For M1, which links to P1, learners need to explain three different types of equipment used in outdoor and adventurous activities. The explanation should relate to why the chosen types of equipment are made of what they are made of and have the characteristics and properties they have.

For M2, which links to P3, learners must demonstrate the correct use of three different types of equipment used in outdoor and adventurous activities, without tutor support. For M3, which links to P4, learners need to explain two recent developments in equipment or facilities for outdoor and adventurous activities. For example, if learners described an increase in the use of LEDs in outdoor lighting systems (P4) then the explanation should include detail on why, for example LEDs use less power, emit less heat and last longer than the more traditional light bulb.

For M4, which links to P5, learners need to demonstrate appropriate procedures for the testing and maintenance of three different pieces of equipment used in outdoor and adventurous activities, without tutor support. This would assume a good working knowledge of such procedures.

For D1, which builds on criteria P1 and M1, learners need to evaluate three different types of equipment. This evaluation should draw together aspects covered in the description (P1) and explanation (M1), relating the manufacture, properties and characteristics of the equipment to their function, and how well they perform that function. A critique of strengths and weaknesses would show this knowledge.

For D2, which builds on criteria P4 and M3, learners need to evaluate two recent developments in equipment or facilities, commenting on their impact/effect.

### Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the assessment and 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, M1, D1, P2	Discover a Range of Outdoor Equipment and Facilities	Having gained part-time employment at an outdoor activities centre, you are given an induction to the equipment and facilities available.	Report
P3, M2, P4, M3, D2	Using Outdoor Equipment	The instructors talk to you about new developments. You also have the opportunity to demonstrate how to use and maintain equipment.	Report or presentation
P5, M4	Testing Outdoor Equipment		Practical activities and assessment Witness statement/ Observation record

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

This unit forms part of the BTEC Sport sector suite. This unit has particular links with the following unit titles in the BTEC Sport suite:

Level 2 Sport	Level 3 Sport
Outdoor and Adventurous Activities	Skills for Land-based Outdoor and Adventurous Activities
Leading Outdoor and Adventurous Activities	Skills for Water-based Outdoor and Adventurous Activities
Expedition Experience	Leading Land-based Outdoor and Adventurous Activities
	Leading Water-based Outdoor and Adventurous Activities
	Outdoor and Adventurous Expeditions
	Alternative Pursuits for Outdoor Adventure
	Principles and Practices in Outdoor Adventure

This unit links with the National Occupational Standards (NOS) for:

- Outdoor Education, Development Training and Recreation at Level 3.

### Essential resources

Centres will need appropriate, specialist equipment and facilities for outdoor and adventurous activities and regular access to facilities. Specialist staff and speakers should be available who are familiar with the equipment and facilities.

### Employer engagement and vocational contexts

It would be helpful if local employers or activity centres were able to offer visits or talks about the outdoor equipment related to their provision and to explain the need for technical knowledge of their employees.

## Indicative reading for learners

### Textbooks

- Cox D – *The Sailing Handbook* (New Holland Publishers UK Ltd, 1999) ISBN 9781853687808
- Getchell A – *The Essential Outdoor Gear Manual* (Ragged Mountain Press, 1995) ISBN 9780070231696
- Judson D – *Caving Practice and Equipment* (Cordee, 1995) ISBN 978187890761
- Long S – *Hillwalking* (Mountain Leader Training UK, 2003) ISBN 9780954151102
- Mattos B – *The Practical Guide to Kayaking and Canoeing* (Lorenz Books, 2002) ISBN 9780754810650
- Peter L – *Rockclimbing Essential Skills and Techniques* (Mountain Leader Training UK, 2004) ISBN 9780954151119
- Royal Yachting Association – *Sail Cruising and Yachtmaster Scheme G15/07* (Royal Yachting Association, 2004) ISBN 9781905104987
- Royal Yachting Association – *National Sailing Scheme Logbook G4/05* (Royal Yachting Association, 2005) ISBN 9780901501455

### Journals

- Canoe focus* (Official magazine of the British Canoe Union)
- Climb magazine* (Greenshires Publishing)
- Descent* (Wild Places Publishing)
- Horizons* (Institute for Outdoor Learning Publication)
- Summit* (BMC Warners Group Publications plc)
- Trail Magazine* (Bauer Publishing Group)

### Websites

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| Association of Mountaineering Instructors | <a href="http://www.ami.org.uk">www.ami.org.uk</a>                             |
| British Canoe Union                       | <a href="http://www.bcu.org">www.bcu.org</a>                                   |
| British Caving Association                | <a href="http://www.british-caving.org.uk">www.british-caving.org.uk</a>       |
| The British Mountaineering Council        | <a href="http://www.thebmc.co.uk">www.thebmc.co.uk</a>                         |
| Mountain Leader Training England          | <a href="http://www.mlte.org">www.mlte.org</a>                                 |
| Petzel                                    | <a href="http://en.petzel.com/petzel/Accueil">en.petzel.com/petzel/Accueil</a> |
| Royal Yachting Association                | <a href="http://www.rya.org.uk">www.rya.org.uk</a>                             |
| Union International Alpine Association    | <a href="http://www.theuiaa.org">www.theuiaa.org</a>                           |



## Delivery of personal, learning and thinking skills

The table below identifies the opportunities for personal, learning and thinking skills (PLTS) that have been included within the pass assessment criteria of this unit.

Skill	When learners are ...
<b>Independent enquirers</b>	describing two recent developments in equipment, or facilities, for outdoor and adventurous activities demonstrating appropriate procedures for testing and maintaining three different pieces of equipment used in outdoor and adventurous activities, with tutor support
<b>Self-managers</b>	demonstrating the correct use of three different types of equipment used in outdoor and adventurous activities, with tutor support demonstrating appropriate procedures for testing and maintaining three different pieces of equipment used in outdoor and adventurous activities, with tutor support
<b>Effective participators</b>	demonstrating appropriate procedures for testing and maintaining three different pieces of equipment used in outdoor and adventurous activities, with tutor support.

Although PLTS 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 developments in equipment practising how to use equipment.

## ● Functional Skills – Level 2

Skill	When learners are ...
<b>ICT – Find and select information</b>	
Select and use a variety of sources of information independently for a complex task	researching recent developments in equipment, or facilities, for outdoor and adventurous activities
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	researching recent developments in equipment, or facilities, for outdoor and adventurous activities
<b>ICT – Develop, present and communicate information</b>	
Bring together information to suit content and purpose	preparing a presentation
Present information in ways that are fit for purpose and audience	preparing a presentation
<b>English</b>	
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	describing recent developments in equipment, or facilities, for outdoor and adventurous activities
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	describing different types of equipment used in outdoor and adventurous activities
	describing different types of facility used for outdoor and adventurous activities
	describing recent developments in equipment, or facilities, for outdoor and adventurous activities.