



National Unit specification: general information

Unit title: Map Reading and Relocation Techniques (SCQF Level 6)

Unit code: H0BM 12

Superclass: RG

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Summary

The purpose of the Unit is to introduce candidates to a number of associated techniques, which will enable them to relocate their position on a topographical map under a variety of conditions in a practical environment.

The candidate will also gain experience in using a Global Positioning System (GPS) device.

This is an optional Unit in the National Certificate in Activity Tourism (SCQF level 6). It is also available as a freestanding Unit.

The Unit may be part of a range of programmes of study in schools, colleges or other centres.

It is unsuitable for candidates with no previous knowledge of map reading and land navigation.

Outcomes

- 1 Explain different relocation techniques
- 2 Demonstrate relocation techniques in specific conditions
- 3 Explain the basic principles and demonstrate the correct use of a Global Positioning System (GPS)

Recommended entry

While entry is at the discretion of the centre, candidates would be expected to have attained one of the following: *Map Reading and Land Navigation* (SCQF level 5), *Map Reading* (SCQF level 5), *Map Reading with Expedition Leadership* (SCQF level 5) and have hillwalking experience.

General information (cont)

Unit title: Map Reading and Relocation Techniques (SCQF Level 6)

Credit points and level

1 National Unit credit(s) at SCQF level 6: (6 SCQF credit points at SCQF level 6*)

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the support notes of this Unit specification.

There is no automatic certification of Core Skills or Core Skill component in this Unit.

National Unit specification: statement of standards

Unit title: Map Reading and Relocation Techniques (SCQF Level 6)

Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

When taking groups of young people out to participate in active or passive pursuits, centres must observe current health and safety regulations, carry out essential risk assessments and meet any other local requirements set by local authorities.

Outcome 1

Explain different relocation techniques.

Performance Criteria

- (a) Explain a range of relocation techniques.
- (b) Identify correct relocation techniques for given situations.

Outcome 2

Demonstrate relocation techniques in specific conditions.

Performance Criteria

- (a) Demonstrate relocation techniques in good visibility.
- (b) Demonstrate relocation techniques in reduced visibility.
- (c) Demonstrate relocation techniques in night conditions.

Outcome 3

Explain and demonstrate the correct use of a Global Positioning System (GPS).

Performance Criteria

- (a) Explain how a GPS system works.
- (b) Describe the benefits and limitations of a GPS system.
- (c) Use a GPS device to give an 8-figure grid reference on a map.
- (d) Use a GPS device to travel on a bearing to a pre-determined point.

National Unit specification: statement of standards (cont)

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Evidence Requirements for this Unit

Evidence is required to demonstrate that candidates have achieved all Outcomes and Performance Criteria.

Evidence will be produced either holistically or Outcome by Outcome.

Outcome 1

Written and/or oral evidence is required to demonstrate that the candidate has achieved the Outcome and Performance Criteria. The evidence must be obtained under closed-book conditions and must include:

- ◆ description of the following techniques and their attributes and limitations:
 - Identification and application of current and historic data
 - triangulation (or resection)
 - aspect of slope
- ◆ identification of the correct techniques to relocate in the particular instances of:
 - good visibility
 - reduced visibility
 - night conditions

Outcome 2

Performance and product evidence is required to demonstrate that the candidate has achieved the Outcome and Performance Criteria.

The evidence will be produced through practical assessment, undertaken in conditions appropriate to the situations described (these can be simulated accurately if the logistical ideal is compromised).

The candidate must on a minimum of two occasions:

- ◆ relocate themselves on a topographical map — correct to within an error margin of 100 metres on every occasion
- ◆ use each of the relevant techniques, identified in Outcome 1, in the most appropriate situation
- ◆ justify the usage of the particular technique in the circumstances encountered

National Unit specification: statement of standards (cont)

Unit title: Map Reading and Relocation Techniques (SCQF Level 6)

Outcome 3 — Written and/or Oral, Performance and Product Evidence

Written and/or oral, performance and product evidence is required to demonstrate that candidates have achieved the Outcome and Performance Criteria. The evidence must be obtained under closed-book conditions and observation made on a minimum of one course navigation.

Candidates must:

- ◆ Detail the technical workings of a GPS device with reference to the reliance on satellites, the number of satellites needed, the conditions of coverage and history and licensing of the system
- ◆ Describe accurately both the benefits and the limitations of the system — benefits would include: an additional tool to the map and compass, quick and efficient, storage of many routes, visual aid. Limitations would include: reliant on good signal, requires batteries, not recommended to use as sole means of navigation, susceptible to the cold. Any other acceptable response
- ◆ Use the GPS device to a) give an 8-figure grid reference from a minimum of three positions on a map and b) to walk a route accurately on a minimum of three occasions. (this may be incorporated into one navigational course, ie three legs)

National Unit specification: support notes

Unit title: Map Reading and Relocation Techniques (SCQF Level 6)

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this Unit

This Unit is an optional Unit within the National Certificate in Activity Tourism (SCQF level 6); it is also available as a freestanding Unit. It should be noted that successful completion of this Unit does not qualify the holder to lead others in mountainous terrain or other outdoor environments.

In this Unit candidates are required to identify and interpret topographic maps to assist in movement over land and relocate themselves if they become 'lost' in an outdoor environment using a variety of methods, including GPS.

The techniques to be covered in Outcomes 1 and 2:

- ◆ identification and application of current and historic data:
 - being able to reflect on previous terrain travelled (including features and contours, etc) and using this information to estimate where the individual is now. This can be coupled with data gathered from the current location and might also include a brief foray ahead
- ◆ triangulation (or resection):
 - taking bearings off of visible and identifiable features using the compass, and taking into consideration 'magnetic variation'. Bearings taken from two or more such features will help 'triangulate the current location of the individual
- ◆ aspect of slope:
 - Using the compass to sweep contour lines perpendicularly in order to determine a current position on the map.

The delivery of the practical element of this Unit should be in a real environment.

In this Unit candidates are required to build on their existing map reading skills by increasing their knowledge and understanding of map reading and relocation techniques. They will learn about relocation techniques and the conditions under which to apply them. They will be assessed on their practical application of the relocation techniques, and the strengths and weaknesses of a Global Positioning System and the situations under which it could be used.

Candidates must have prior knowledge and skills in map reading and hill walking.

This Unit could be integrated with hill walking Units such as *Sporting Activity Participation and Performance: Hill Walking* F411 11.

National Unit specification: support notes (cont)

Unit title: Map Reading and Relocation Techniques (SCQF Level 6)

Guidance on learning and teaching approaches for this Unit

Outcome 1 should be delivered prior to practical activity in Outcomes 2 and 3. It is anticipated that the Unit as a whole will be delivered in a relevant outdoor environment. In order to gain an understanding of maps, demonstrations, video, group discussion, text books and the internet may be used.

Demonstrations given by the lecturer/teacher in the initial phase, and possibly throughout the delivery of the Unit should ensure adequate coverage of the different conditions.

The candidate will gain knowledge and understanding of techniques and use of maps through practical experience and this will give them the ability to confidently navigate and relocate.

Delivery of elements of the Unit may be by demonstration, role-play and practicing the skills of communicating with others in order to explain and develop the tasks.

Initial practice may be given and when the candidate reaches a satisfactory standard they should progress to real situations.

For Outcome 1 candidates would benefit from:

- ◆ working in small groups to research the different techniques and when they might be used
- ◆ going hill walking to have the techniques explained in a practical setting
- ◆ working individually to complete work sheets to ensure understanding

For Outcome 2 candidates would benefit from:

- ◆ working in a practical setting
- ◆ working initially in small groups to practice the different techniques
- ◆ working individually to improve own skills

For Outcome 3 candidates would benefit from:

- ◆ working in small groups researching the Global Positioning System
- ◆ working individually in a practical setting using a GPS device

Guidance on approaches to assessment for this Unit

The following approaches to assessment are suggested:

Outcome 1: Restricted response questions

Outcome 2: Log book/and Observation checklist.

Candidates keep a log of all walks undertaken noting the weather, terrain conditions, and the map readings taken. Candidates should maintain a log for each of the two occasions identifying when assessment took place.

Outcome 3: Multiple choice questions/Log book/and Observation checklist

National Unit specification: support notes (cont)

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Opportunities for the use of e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

Opportunities for developing Core Skills

In this Unit candidates will be able to locate and relocate themselves on the earth's surface using maps, compasses and global positioning system.

Candidates will

- ◆ make decisions
- ◆ calculate position
- ◆ plan routes

This means that as they are doing this Unit they will be developing aspects of the Core Skills of *Communication, Numeracy and Problem Solving*.

Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website www.sqa.org.uk/assessmentarrangements

History of changes to Unit

Version	Description of change	Date

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