



## National Unit specification: general information

**Unit title:** Mobile Technology: Device Connectivity (SCQF level 5)

**Unit code:** H2P7 11

**Superclass:** CB

**Publication date:** October 2012

**Source:** Scottish Qualifications Authority

**Version:** 01

## Summary

Mobile technology is now well integrated into workplace and personal use and this Unit is designed to develop knowledge and understanding of the principles of connectivity of mobile devices. This covers connectivity to networks and peripheral devices using contemporary wired and wireless methods.

Practical skills will be developed in relation to connectivity through the use of contemporary mobile devices. The knowledge, understanding and practical skills will be applied by the candidate to solve problems related to device connectivity.

This is a mandatory Unit within the National Progression Award (NPA) in Mobile Technology (SCQF level 5), but is also available as a freestanding Unit.

## Outcomes

- 1 Describe mobile technology connection methods.
- 2 Configure and connect mobile devices.
- 3 Investigate a range of connection problems in mobile devices.

## Recommended entry

While entry is at the discretion of the centre, it would be beneficial if candidates have achieved the Unit *Mobile Technology Systems* (H1T1 11), or equivalent.

## Credit points and level

1 National Unit credit at SCQF level 5: (6 SCQF credit points at SCQF level 5\*)

*\*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.*

## **General information (cont)**

**Unit title:** Mobile Technology: Device Connectivity (SCQF level 5)

### **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 components in this Unit.

## **National Unit specification: statement of standards**

### **Unit title: Mobile Technology: Device Connectivity (SCQF level 5)**

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.

#### **Outcome 1**

Describe mobile technology connection methods.

##### **Performance Criteria**

- (a) Describe mobile device internet connectivity using Wi-Fi methods.
- (b) Describe mobile device internet connectivity using GSM mobile telephony methods.
- (c) Describe the methods used to connect mobile devices to external peripherals, and other mobile devices.

#### **Outcome 2**

Configure and connect mobile devices.

##### **Performance Criteria**

- (a) Configure and connect mobile devices to internet using a Wi-Fi network.
- (b) Configure and connect mobile devices to internet using a GSM network.
- (c) Configure and connect mobile device peripherals.

#### **Outcome 3**

Investigate a range of connection problems in mobile devices.

##### **Performance Criteria**

- (a) Describe basic troubleshooting techniques.
- (b) Troubleshoot common Wi-Fi connection problems.
- (c) Troubleshoot common GSM connection problems.
- (d) Troubleshoot common peripheral connection problems.

## **National Unit specification: statement of standards (cont)**

**Unit title:** Mobile Technology: Device Connectivity (SCQF level 5)

### **Evidence Requirements for this Unit**

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

#### **Outcome 1**

Written and/or oral recorded evidence, produced under closed-book conditions, is required to demonstrate that candidates have achieved all Performance Criteria. Evidence for this Outcome must include:

- ◆ A description of mobile device internet connectivity using two current Wi-Fi methods.
- ◆ A description of mobile device internet connectivity using two current GSM mobile telephony methods.
- ◆ A description of two methods used to connect mobile devices to external peripherals and other mobile devices.

#### **Outcome 2**

Candidates are required to provide written and/or oral and performance evidence under supervised, controlled and open-book conditions, which demonstrates that they can:

- ◆ Configure and connect mobile devices to internet using a Wi-Fi network. Candidates must configure a mobile device using a Wi-Fi method to access a specified resource on the internet and indicate the steps taken to configure the device and access the resource.
- ◆ Configure and connect mobile devices to internet using a GSM network. Candidates must configure a mobile device using a GSM method to access a specified resource on the internet and indicate the steps taken to configure the device and access the resource.
- ◆ Configure and connect two mobile device peripherals using wireless methods. Candidates must configure a mobile device to allow it to successfully connect to two different devices using a wired and a wireless method. Candidates must complete a log which indicates the steps taken to configure the device, including testing to ensure the peripheral device worked.

#### **Outcome 3**

Written and/or oral recorded evidence is required which demonstrates that candidates can describe at least two basic troubleshooting techniques for each of Wi-Fi connections, GSM connections and wireless peripheral connections.

Candidates are required to provide written and/or oral recorded and performance evidence, under supervised, controlled and open-book conditions which demonstrates that they can:

- ◆ Troubleshoot a pre-set Wi-Fi connection problem on a mobile device and perform any configuration changes to allow rectification of the problem. Candidates must complete a log which indicates the steps taken to troubleshoot and configure the device.

## **National Unit specification: statement of standards (cont)**

**Unit title:** Mobile Technology: Device Connectivity (SCQF level 5)

- ◆ Troubleshoot a pre-set GSM connection problem on a mobile device and perform any configuration changes to allow rectification of the problem. Candidates should complete a log which should indicate the steps taken to troubleshoot and configure the device.
- ◆ Troubleshoot a pre-set wireless peripheral problem on a mobile device and perform any configuration changes to allow rectification of the problem. Candidates should complete a log which should indicate the steps taken to troubleshoot and configure the device.

## **National Unit specification: support notes**

### **Unit title:** Mobile Technology: Device Connectivity (SCQF level 5)

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 introduces candidates to the various ways that mobile devices can connect to other devices such as peripherals and computer systems. Candidates will learn about both wired and wireless techniques using current methods. Current wireless connection types could include; Wi-Fi 802.11b, 802.11g, 802.11n and Bluetooth.

Candidates must also be able to demonstrate knowledge of how mobile devices can access secure Wi-Fi hotspots, this should also include how a mobile device is configured to connect via a proxy server.

Mobile device internet connectivity using GSM mobile telephony methods could include two of the following — 3G, EDGE (EGPRS) and GPRS.

Connection of external two peripheral devices to mobile devices could include two of the following — connection of Bluetooth headsets, Bluetooth speakers, Bluetooth handsfree car kits, connection to PC or the cloud to synchronise contacts, calendar, etc using USB, Bluetooth or WI-FI.

Candidates will also be introduced to troubleshooting techniques used to overcome connection problems in Wi-Fi, GSM and wireless peripheral connections. Candidates should be encouraged to apply these techniques on real devices.

### **Guidance on learning and teaching approaches for this Unit**

A candidate-centred, practical and interactive approach to delivery and learning should be adopted throughout. The range of methods used in delivery should ensure that experiential learning opportunities are available to candidates.

The Outcomes and Performance Criteria have not specified the types of devices or connections. This allows the teaching to be carried out on many different contemporary devices. In the main, this may be mobile phones but delivery could also use such items as portable tablet devices.

Candidates will require individual access to appropriate mobile devices throughout this Unit.

Practical activities in Outcomes 2 and 3 should be taught and used to illustrate and exemplify the knowledge and understanding required for Outcome 1.

Learning by observing and then undertaking practical exercises will be beneficial for candidates, especially with respect to Outcomes 2 and 3.

## National Unit specification: support notes (cont)

**Unit title:** Mobile Technology: Device Connectivity (SCQF level 5)

### Guidance on approaches to assessment for this Unit

There are opportunities for integrated learning and assessment across the Outcomes and wherever possible a holistic approach should be taken to the delivery of assessment within the Unit. The following guidelines are designed to maximise assessment with learning in an effective way.

Outcome 1 should be assessed separately, however there is scope to assess this during or after candidates have had an adequate mix of theory and practice. Short answer questions are recommended.

Outcomes 2 and 3 could be combined, and assessed in the form of a practical project-based activity or assessed separately.

All three Outcomes could be assessed via a holistic approach, through a project-based activity mixing practical activity and written/verbal reports. Centres must ensure that all Performance Criteria are covered in the project brief.

### 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 e-checklists. 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 have opportunities to develop a range of Core Skills including *Communication*, *Information and Communication Technology* and *Problem Solving*.

*Communication* may be developed through written and/or verbal reporting throughout all assessments and practical exercises.

*Information and Communication Technology* may be developed through the nature of the practical activities and related software and hardware used.

*Problem Solving* may be developed through Outcomes 2 and 3 where candidates will be assigned specific tasks that require a certain level planning, evaluating and critical thinking.

### 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](http://www.sqa.org.uk/assessmentarrangements)

## History of changes to Unit

Version	Description of change	Date

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