

National Unit Specification: general information

UNIT Digital Computing (SCQF level 3)

CODE F1L2 09

SUMMARY

This Unit is a mandatory Unit within the National Progression Award (NPA) Digital Literacy but may also be delivered as a stand-alone Unit.

In this Unit candidates will generate digital skills and techniques which will allow them to use a computing device to perform simple tasks, use a limited range of productivity software and find out basic computer related Health and Safety information and plan a simple task to resolve a computer health and safety problem.

This Unit provides an introduction to digital computing and is suitable for candidates with no previous experience who wish to take the Unit to obtain a basic knowledge of digital computing as an interest subject or as a basis for further study.

OUTCOMES

- 1 Operate a computer device with limited assistance.
- 2 Use productivity software on a computing device with limited assistance.
- 3 Present basic information on a Computer Health and Safety issue with limited assistance.
- 4 Create and review the effectiveness of a plan of a simple task to tackle a computer health and safety problem with limited assistance.

RECOMMENDED ENTRY

While entry is at the discretion of the centre, it would be beneficial for candidates to have attained:

DO1D 08 Information Technology (Access 2)

or similar qualifications or experience.

Administrative Information

Superclass: CD

Publication date: May 2007

Source: Scottish Qualifications Authority

Version: 01

© Scottish Qualifications Authority 2007

This publication may be reproduced in whole or in part for educational purposes provided that no profit is derived from reproduction and that, if reproduced in part, the source is acknowledged.

Additional copies of this Unit Specification can be purchased from the Scottish Qualifications Authority. The cost for each Unit Specification is £2.50. (A handling charge of £1.95 will apply to all orders for priced items.)

National Unit Specification: general information (cont)

UNIT Digital Computing (SCQF level 3)

CREDIT VALUE

1 credit at Access 3 (6 SCQF credit points at SCQF level 3*)

**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

Achievement of this Unit gives automatic certification of the following Core Skill:

Complete Core Skill **Information Technology and Problem Solving at SCQF level 3**

Core Skills components **None**

There are also opportunities for candidates to develop aspects of the following Core Skills:

Communication (SCQF level 3)

Working with Others (SCQF level 3)

These opportunities are highlighted in the Support Notes of this Unit Specification.

National Unit Specification: statement of standards

UNIT Digital Computing (SCQF level 3)

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 the Scottish Qualifications Authority.

OUTCOME 1

Operate a computing device with limited assistance.

Performance Criteria

- (a) Basic operations are carried out with limited assistance.
- (b) Basic use of menus and selection from menus is accurate.
- (c) Loading and saving of an existing file with limited assistance.

OUTCOME 2

Use productivity software on a computing device with limited assistance.

Performance Criteria

- (d) Processing of familiar data is carried out effectively.
- (e) Data is correctly extracted.
- (f) Data is output in an appropriate format for the productivity software.

OUTCOME 3

Present basic information on a Computer Health and Safety issue with limited assistance.

Performance Criteria

- (a) Find basic information on Computer Health and Safety.
- (b) Extract key features from the Computer Health and Safety information.
- (c) Present the key features in an appropriate digital format.

OUTCOME 4

Create and review the effectiveness of a plan of a simple task to tackle a computer health and safety problem with limited assistance.

Performance Criteria

- (a) Identify the sequence of steps required to complete the task.
- (b) Identify resources needed for the task.
- (c) Carry out the computer health and safety task.
- (d) Review and evaluate the effectiveness of the planned task.
- (e) Identify the lessons learned about problem solving.

National Unit Specification: statement of standards (cont)

UNIT Digital Computing (SCQF level 3)

EVIDENCE REQUIREMENTS FOR THIS UNIT

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

Performance, product and written/oral recorded evidence is required to demonstrate that the candidate has achieved all the Outcomes and Performance Criteria. The evidence must be produced under supervised, controlled and open-book conditions. The candidate may have limited assistance in carrying out the assessment activities.

Performance evidence supplemented by an assessor observation checklist is required to demonstrate that the candidate has achieved Outcome 1. Candidates must demonstrate starting up a computing device and shutting down a computing device; selecting and opening two different application packages from an operating system menu; opening an existing file, changing it, saving it and closing the file, repeated in both application packages. The candidate may have limited assistance in carrying out these operations. Candidates must use a keyboard and one other input device. If a candidate needs to be re-assessed a different digital computing device must be used.

Product evidence in the form of print outs, screen shots or disk copies of the work done is required to demonstrate that the candidate has achieved Outcome 2. The evidence produced must show that the candidate can perform simple processes on familiar data, produce a new file and output in a given format, edit an existing file and output in a given format. The candidate may have limited assistance in carrying out these processes. Candidates must use at least two types of productivity software from word processing, spreadsheet, database, email, artwork and imaging, presentation, educational software on a computing device. If a candidate needs to be re-assessed different productivity software must be used.

The evidence for Outcome 3 must include:

- ◆ Performance evidence, supplemented by an assessor observation checklist demonstrating that the candidate can find basic computer health and safety information by searching for data by keyword, field or filename. The data can be text, pictures, video or audio. The search must be carried out on electronic information related to at least two computer health and safety issues.
- ◆ Product evidence in the form of a report of no more than 50 words. The report must be in a digital format and show the key features which have been extracted.

If a candidate needs to be re-assessed a different computer health and safety issue must be used.

The evidence for Outcome 4 will consist of written and/or oral recorded evidence which details:

- ◆ A sequence of at least three steps and any resources needed to carry out the task. The resources must be from a range which the candidate recognises.
- ◆ The activities undertaken, the effectiveness of the planned task identifying at least two lessons learned about solving problems. Simple criteria can be provided by the teacher/lecturer to assist the candidate in defining effectiveness.

If a candidate needs to be re-assessed a different planned task must be used.

National Unit Specification: statement of standards (cont)

UNIT Digital Computing (SCQF level 3)

The Assessment Support Pack for this Unit provides sample assessment material including exemplar tasks and sample candidate evidence. Centres wishing to develop their own assessments should refer to the Assessment Support Pack to ensure a comparable standard.

National Unit Specification: support notes

UNIT Digital Computing (SCQF level 3)

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

The content and context for this Unit should help candidates enhance their knowledge and understanding of everyday digital tools. A range of digital computing devices are available and these may include personal computing systems which may be mobile, stand-alone or networked.

Outcome 1

This Outcome relates to the basic operation of a computing system. Candidates are required to perform a limited number of basic operations. The range of operations includes starting up and closing down a computing system, displaying and using menu systems accurately. Most contemporary operating systems and application software incorporate menu systems. The actual function used via the menu is not important; what is important is that the candidate can interact with the menu interface. Candidates are not required to deal with non-standard conditions at this level. All that is expected is the simple display of a menu and basic selection of a menu option.

Candidates are required to load and save a file, using any appropriate productivity software package and any suitable storage device (such as hard disk, floppy disk, flash memory stick or zip drive, DVD or CD-ROM). For example, candidates could load a document into a word processing program or create an image in artwork and imaging software.

Outcome 2

This Outcome relates to candidate's skills in performing simple processes using productivity software. Candidates are required to demonstrate basic skills in at least two application areas. Suitable productivity packages include word processors, spreadsheet, database, email, artwork and imaging, presentation and educational software. For each productivity software package used, candidates' are required to enter, edit and output data. The data used should be familiar to the candidate. The actual processes will vary from program to program. For example, in the context of a word processing program, entering data would involve typing text; editing would involve revising or removing text and output would involve printing text. In the context of an email, discussion forum, phone text message or Internet chat program, input would relate to the text the candidate types; editing would involve changes to that text or removal of some of text (backspace or delete keys), and output would involve sending the message to the chat window (ie pressing the enter or send keys).

The important point is that a wide range of software can be used to demonstrate these basic skills. Processes must be carried out effectively and with limited assistance. So candidates are expected to succeed in carrying out each process without too much help from their teacher/lecturer. Occasional assistance is acceptable. Candidates are required to output the data in a given format. At this level, the given format should be very simple. For example, a word processing program might output text in a continuous format; a spreadsheet program might output text in a tabular format; a paint program should output data in a graphical form.

National Unit Specification: support notes (cont)

UNIT Digital Computing (SCQF level 3)

Outcome 3

This Outcome relates to a candidate's ability to find and extract information. The source of the information could be a simple document(s) which has been provided to the candidate or a CD-ROM based information source (such as an educational program) or the Internet (such as the World Wide Web). Irrespective of the source candidates are required to select information which satisfies a single criterion. This criterion should be very simple. For example in the context of Computer Health and Safety it might relate to the use of government legislation documents about the use of Visual Display Units (VDU's), Repetitive Strain Injuries (RSI) or safety using computer cables (placement, type, condition) and furniture (correct height, distance, size).

Once the information has been located the candidate should extract the main features from their perspective (how it might affect them) on the use of computing equipment and present the main features in a digital format which could include word processor, presentation software, video and/or conferencing facilities, text messaging etc. Teachers/lecturers can provide candidates with limited assistance and guidance on what the main features would be for a particular computer health and safety issue.

Outcome 4

This Outcome relates to a candidate's ability to create a plan to carry out a task to tackle a computer health and safety problem and review the effectiveness of the plan. The candidate must be able to identify a sequence of steps and resources required, to complete the task. Resources might include sources of information, set procedures, equipment or physical resources. At this level candidates are given some flexibility in their choice of resources.

During the review and evaluation, candidates are expected to use simple criteria to identify strengths and/or weaknesses in the plan and to draw conclusions as to how they might tackle a similar problem in the future identifying lessons learned about problem solving. Criteria might be appropriateness, accuracy, or workability of the solution or outcome to the problem.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

The learning and teaching approaches should focus on everyday activities where digital devices and software are used for computing purposes. It should encourage candidates to transfer the skills acquired to other everyday contexts or situations.

This Unit should be activity based with opportunities to develop skills in real or simulated situations. For example learning activities in Outcome 1 might include the correct handling and operation of one or more appropriate computing device(s). Only the basic use of each device is expected. So, for example, candidates might use a keyboard for data entry, a mouse for basic interactions with productivity software and a monitor for output purposes. Devices should be appropriate for the operations being performed and the candidate's individual needs. Teachers/lecturers can provide candidates with limited assistance. So, for example it is acceptable to give candidates occasional help in their routine use of the keyboard, mouse or monitor.

National Unit Specification: support notes (cont)

UNIT Digital Computing (SCQF level 3)

Candidates at this level may require several attempts at carrying out these operations. Most contemporary operating systems and application software incorporate menu systems. The actual function used via the menu is not important; what is important is that the candidate can interact with the menu interface. Candidates are not required to deal with non-standard conditions at this level. All that is expected is the simple display of a menu and basic selection of a menu option.

Learning and teaching activities for Outcome 2 include opening and using two separate applications to edit, enter and output data. The data should be simple and may include adding, amending or deleting data from an existing file. These activities may be combined with Outcome 1. Candidates may require limited assistance in using the applications and outputting the data in the correct format.

In Outcomes 3 and 4 the candidate may find and extract information on several computer health and safety issues and then plan and carry out a simple task to solve one of those issues, with a sequence of steps, identification of resources, reviewing and evaluating the planned task. It is important that the candidate can identify lessons learned about problem solving.

If this Unit is delivered as part of a National Progression Award (NPA), there may be opportunities to combine activities in this Unit with other Units in the NPA. Where the *Digital Computing* Unit is being combined with other Units to create an enhanced learning and teaching programme, care must be taken to ensure that all aspects of each Unit are covered and adequate time must be allowed for coverage of all Units. Such a programme would create opportunities to consolidate the skills gained in this Unit.

OPPORTUNITIES FOR CORE SKILL DEVELOPMENT

The opportunity to develop aspects of achievement in the Core Skill Problem Solving at Access 3 may be demonstrated by the candidate in Outcomes 3 and 4 of this Unit. For example in Outcome 3 the candidate is required to apply Critical Thinking to extract and present information. In Outcome 4 the candidate is required to carry out a plan (through a sequence of steps), select appropriate resources, demonstrate the ability to review and evaluate a simple problem and identify strengths and/or weaknesses in the effectiveness of the plan and identify lessons learned about problem solving.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

The number of activities undertaken by the candidate in the course of the Unit should not be limited to those specified for assessment purposes. The candidate should be given opportunities to practice the skills in a variety of contexts and circumstances prior to assessment.

Evidence of attainment should be gathered, wherever possible, from integrated activities, or naturally occurring activities within this Unit, whether the Unit is being studied as a stand alone Unit or being used in combination with other Units in the candidate's programme. For example, in Outcomes 1 and 2 the assessment could be combined by the provision of an assessment task list for the candidate carrying out the activities.

It would be good practice to encourage candidates' to complete an evidence/task sheet or candidate log as they carry out the tasks to track the candidates' progress.

National Unit Specification: support notes (cont)

UNIT Digital Computing (SCQF level 3)

In Outcome 3, the candidate will find, extract and present information about Computer Health and Safety by searching using keywords, fields or filenames. The accuracy of the key features is less important than the candidates' ability to find and extract the information. In Outcome 4, the assessor might question the candidate about the sequence of steps the candidate might take and how the candidate might pick the resources needed to carry out the plan. Alternatively the assessor may wish to provide a proforma which the candidates may wish to complete themselves. After the tasks have been carried out the candidate can review the plan, steps taken and evaluate the effectiveness of the plan and highlight lessons learned about problem solving.

When assessing using oral questioning a copy of the questions asked and answers given must be kept. Video or tape recording can also be used when assessment has been carried out orally or by observation. Any evidence provided by the candidate such as a log or evidence sheet should be signed by the assessor and dated as each task is completed.

If a candidate needs to be re-assessed, a different digital computing device, productivity software or computer health and safety issue must be used for each Outcome as appropriate. The assessment conditions of the re-assessment must be the same as the original assessment instrument.

The Assessment Support Pack for this Unit provides sample assessment material including exemplar tasks and sample candidate evidence. Centres wishing to develop their own assessments should refer to the Assessment Support Pack to ensure a comparable standard.

An assessor observation checklist should be maintained and kept up to date to keep track of candidate progress and to provide evidence for internal and external verification purposes.

CANDIDATES WITH DISABILITIES AND/OR ADDITIONAL SUPPORT NEEDS

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* (www.sqa.org.uk).