National Unit Specification: general information

UNIT Digital Numeracy (SCQF level 3)

CODE F1L1 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 skills and techniques which will allow them to interpret and communicate simple graphical digital information, such as reading graphs and recording measurements using digital software or tools. The Unit also involves the application of basic numerical skills in everyday digital contexts including recognising and calculating binary file formats converting decimals and percentages, using software tools.

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

OUTCOMES

1 Read and use simple measurements using a digital tool.
2 Extract and communicate simple graphical information using digital software.
3 Apply a range of basic numerical skills in an everyday digital context.

RECOMMENDED ENTRY

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

D01C 08 Numeracy (Access 2)

or similar qualifications or experience.

Administrative Information

Superclass: CD

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Version: 01

National Unit Specification: general information (cont)

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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 **Numeracy at SCQF level 3**

Core Skills components **None**

National Unit Specification: statement of standards

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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

Read and use simple measurements using a digital tool.

Performance Criteria

(a) Read a simple measurement scale to nearest marked number.
(b) Use recorded simple measurements to calculate the next sequence in a scale.

OUTCOME 2

Extract and communicate simple graphical information using digital software.

Performance Criteria

(a) Extract information from simple tables, graphs and diagrams.
(b) Communicate information in simple tables, graphs and diagrams.

OUTCOME 3

Apply a range of basic numerical skills in an everyday digital context.

Performance Criteria

(a) Recognise and use, whole numbers, decimals, fractions and percentages.
(b) Recognise and calculate binary file formats.
(c) Calculate simple fractions and percentages of a quantity.
(d) Use simple formulae expressed in words.

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.

Product evidence should be produced 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 should produce a folio of work which should include print outs, screen shots and disk copies demonstrating:

- Reading and use of simple measurements on at least two occasions.
- Extraction and communication of one piece of information from each of the following: tables, graphs and diagrams using one piece of digital software.
- Eight different calculations on five rules of number. This must include:
  - the recognition and use of whole numbers, decimals, fractions and percentages
  - the recognition and calculation of binary file formats
  - calculation of simple fractions and the percentage of a quantity
  - use of simple formulae expressed in words

If a candidate needs to be re-assessed different digital tools/contexts must be used for the Outcomes.

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 Numeracy (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 tools are available and these may include application software, electronic calculators, electronic scales, electronic measurement tools on-line/Internet/Survey software etc.

Outcome 1

At this level, scales on measuring instruments and graphs should be clearly marked with every main division numbered. Unnumbered sub-divisions should be clear and easily interpreted. Candidates should read scales to the nearest numbered division. For example a measuring instrument could be a ruler within a software application numbered in cm and marked in cm and mm and read to the nearest cm; electronic bathroom scales could be numbered in 10kg and marked in 10kg and kg and read to the nearest 10kg; and electronic thermometers could be numbered in ^{0}C and marked in 0.5^{0}C and read to the nearest ^{0}C. Suitable activities could be measurement of weight or temperature. Household measurements such as measurement for carpets or curtains or measurement of volume or weights for recipes could also be used using digital software. They should have clear sub-divisions, be numbered to the nearest division and read to the nearest numbered division. Currency or temperature conversion graphs could be used. The graphs should be simple line graphs.

Outcome 2

At this level information should be clearly presented and set in everyday digital contexts. Examples of digital software might include spreadsheet software, graph software, on-line /Internet/Survey software. Each table could have two categories of information. Examples of suitable tables could be on-line or electronic bus or train departures or arrival times, or on-line or electronic bus or train fares according to distance for two bus and/or train companies; or cost of hiring videos on-line where there are two rates – one for new releases and one for normal rate. A simple electronic diagram could be a two-dimensional (2D) representation of a filing cabinet or a room plan with windows and doors marked. Candidates should be familiar with simple tables, graphs and diagrams commonly used in everyday situations.

Outcome 3

At this level the candidate should be able to add and subtract whole numbers; multiply and divide whole numbers; understand the basic decimal and fraction systems and recognise and calculate binary file formats, for example how many bits in a byte, how many bytes in a kilobyte or how many kilobytes in a megabyte. The candidate should be able to work with percentages such as 10%, 20%, 25%, 50% and fractions where the numerator is 1. The candidate should also carry out simple calculations with formulae expressed in words eg working out the cooking time with a digital tool for a 1kg chicken where the instructions are 20 minutes per 500 grams and 20 minutes extra. At this level the candidate should decide which operations to use and the order in which to carry them out.

Calculations should be checked against estimates or by using the inverse algorithm. Evidence of checking procedures is not required.

The use of numerical calculators (standard and scientific) should be encouraged.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

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

Candidates should be encouraged throughout the Unit to make use of digital skills in calculations, to make efficient use of calculators and to apply the strategy of checking. This Unit should be activity based with opportunities to develop skills in real or simulated situations. For example learning activities might include calculating food weights, room sizes for carpeting or wallpaper, working out sale prices and bus and train timetables etc. For a graph the teacher/lecturer might draw the axes and give the scale which would be labelled in divisions and marked in sub-divisions and the candidate would plot the given information. Bar charts should be simple with scales and categories given and pie chart sections related as simple fractions. Candidates could complete 2D representations of 3D objects such as fridges or freezers.

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 Numeracy* 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 Numeracy at Access 3 may be demonstrated by the candidate in all the Outcomes of this Unit. For example in Outcome 1 the candidate is required to read and use simple measurements using a digital tool. In Outcome 2 the candidate is required to extract and communicate simple graphical information using digital software. In Outcome 3 the candidate must apply a range of basic numerical skills in an everyday digital context.

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.

National Unit Specification: support notes (cont)

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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 Outcome 1 the candidate can use digital measurement instruments and record measurements, which could be input into a simple graph in Outcome 2 and then presented in a graphical form. In Outcome 3 the candidates can record their basic numerical skills using a digital device.

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.

If a candidate needs to be re-assessed different digital tools/contexts must be used for the Outcomes. 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)**.