National Unit Specification: general information

UNIT Numeracy (Access 3)

NUMBER D01C 09

COURSE

SUMMARY
This Unit seeks to develop skills of interpretation and communication of simple graphical information and application of basic numerical skills in everyday contexts.

OUTCOMES
1. Read and use a simple scale.
2. Extract simple graphical information.
3. Communicate simple graphical information.
4. Apply a range of basic numerical skills in everyday contexts.

RECOMMENDED ENTRY
While entry is at the discretion of the centre, candidates would normally be expected to have attained Numeracy (Access 2).

CREDIT VALUE
1 Credit at Access 3 (6 SCQF credit points at SCQF level 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.*

Administrative Information

Superclass: RB

Publication date: March 2004

Source: Scottish Qualifications Authority

Version: 02

National Unit Specification: general information (cont)

CORE SKILLS

Information on the automatic certification of any core skills in this Unit is published in *Automatic Certification of Core Skills in National Qualifications* (SQA, publication code BA0906).

The attainment of this Unit will lead to the automatic award of:

- Numeracy at Access 3

National Unit Specification: statement of standards

UNIT Numeracy (Access 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
Read and use a simple scale.

Performance criteria
a) Use a simple scale to the nearest marked number.

Note on range for the outcome
Simple scale: scales where the main divisions are numbered and the minor divisions are marked.

Evidence requirements
Oral, written and/or performance evidence that the candidate can either: read and use a simple scale on a familiar measuring instrument to measure to the nearest marked number.

OUTCOME 2
Extract simple graphical information.

Performance criteria
a) Extract information from simple tables, graphs, charts and diagrams.

Note on range for the outcome
Simple tables, simple graphs, simple charts and diagrams: each task is partially completed.

Evidence requirements
Oral, written and/or performance evidence that the candidate can correctly extract one piece of information from three of tables, graphs, charts and diagrams.

OUTCOME 3
Communicate simple graphical information.

Performance criteria
a) Communicate information in simple tables, graphs, charts and diagrams to communicate information.

Note on range for the outcome
Simple tables, graphs, charts and diagrams: each task is partially completed.

Evidence requirements
Evidence that the candidate can correctly communicate three pieces of information in three of tables, graphs, charts and diagrams, where each task has been partially completed.

National Unit Specification: statement of standards

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OUTCOME 4
Apply a range of basic numerical skills in everyday contexts.

Performance criteria
a) Recognise and use whole numbers, decimals, fractions and percentages.
b) Calculate simple fractions and percentages of a quantity.
c) Use simple formulae expressed in words.

Note on range for the outcome
Simple fractions: unitary fractions (eg $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{5}$, etc)

Simple percentages: simple whole number percentages (eg. 5%, 10%, 25%, 75%, 80%, etc)

Recognise and use notations for whole numbers, decimals, percentages and fractions.

Evidence requirements
Oral, written and/or performance evidence that the candidate can:
- write a number in words
- recognise a number written in words
- recognise the place value of decimal numbers
- recognise meaning of percentage and fraction in each case on at least one occasion correctly
- carry out seven different calculations in context on four rules of number, simple percentages, unitary fractions and simple formulae and can score the required threshold mark for each performance criterion. (At least half these calculations should involve two operations).

National Unit Specification: support notes

UNIT Numeracy (Access 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 core skills Unit should be appropriate to the personal needs of the candidate and set in everyday situations.

Core skills Units are stated at five levels of attainment, with activities becoming progressively more demanding in breadth and depth, and in the extent of individual autonomy required. The appendix to this Unit shows the relationship between the levels in *Numeracy.*

This Unit is designed to develop numeracy skills at level which is the minimum required for entry into business, administration, care and technician occupations.

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 measuring instruments, rulers, measuring tapes, metre sticks could be numbered in cm and marked in cm and mm and read to the nearest cm; bathroom scales could be numbered in 10kg and marked in 10kg and kg and read to the nearest 10kg; and thermometers could be numbered in °C and marked in 0.5°C and read to the nearest °C. Suitable activities could be personal measurement of height, weight or temperature. Household measurements such as measurement for carpets or curtains or measurement of volume or weights for recipes could also be used. The graphs should be simple line graphs. Currency or temperature conversion graphs could be used. They should have clear sub-divisions, be numbered to the nearest division, and read to the nearest numbered division.

Outcome 2

At this level, information should be clearly presented and set in everyday contexts. Each table could have two categories of information. Examples of suitable tables could be bus or train departure or arrival times, or bus or train fares according to distance for two bus and/or train companies; or cost of hiring videos where there are 2 rates – one for new releases and one for normal rate. A simple diagram could be a 2D representation of a filing cabinet or a room plan with windows and doors marked, or nets for cubes and cuboids.

Outcome 3

At this level and above, the candidate should be familiar with simple tables, line graphs, bar or pie charts, and diagrams commonly used in everyday situations. Suitable tables would have two categories of information. The teacher/lecturer gives the information and headings and the candidate completes the table. For a graph, the teacher/lecturer would 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.

National Unit Specification: support notes (cont)

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Outcome 4
At all levels in the core skill of numeracy, the candidate should be able to:

- add and subtract whole numbers
- multiply and divide whole numbers
- understand the basic decimal and fraction systems.

At Access 3, 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 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 calculators
The sensible use of numeric calculators should be encouraged.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

The learning and teaching approaches should encourage candidates to identify evidence of their attainment and to transfer the skills acquired to other contexts.

Where appropriate, numeracy topics should be taught and skills developed in real-life contexts. Candidates should be encouraged throughout the Unit to make use of skills in mental and written calculations, to make efficient use of calculators and to apply the strategy of checking. The outcomes should be demonstrated in situations which the candidate may reasonably be expected to encounter everyday.

This Unit should be activity based with opportunities to develop the skills in real or simulated situations.

Where the *Numeracy* Unit is being combined with another Unit 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 the coverage of both Units. Such a programme would create opportunities to consolidate the skills gained in this Unit.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

The statement of satisfactory performance for each outcome indicates the minimum required for the purpose of summative assessment. However, the number of activities undertaken by the candidate in the course of the Unit should not be limited to those specified for assessment purposes. In awarding the candidate *Numeracy* at Access 3 the teacher/lecturer must be confident that the candidate will be able to demonstrate these skills in any appropriate context and set of circumstances.

National Unit Specification: support notes (cont)

UNIT Numeracy (Access 3)

Teachers/lecturers must remember to distinguish between their differing roles in formative and summative assessment. In the former, as much help and support as is required by the candidate may legitimately be given by the teacher/lecturer. Tasks which are used to provide evidence for summative assessment must be completed by the candidate unaided.

Evidence of attainment should be gathered, wherever possible, from integrated activities whether this Unit is being studied as a stand alone Unit or in combination with other Units in the candidate's programme. Where an integrated approach to assessment is adopted, teachers/lecturers should provide a matrix of evidence which shows clearly where each PC is covered. This will be necessary for internal and external verification.

SPECIAL NEEDS

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. Special needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering special alternative outcomes for Units. For information on these, please refer to the SQA document *Guidance on Special Assessment Arrangements* (SQA, publication code AA0645).

Numeracy core skills Units **Appendix**

Progression chart

Skill	Access 2	Access 3	Intermediate 1	Intermediate 2	Higher
Use graphical information	Read and use a basic scale. Identify basic graphical information. Communicate basic graphical information with teacher/lecturer support.	Read and use a simple scale. Extract simple graphical information. Communicate simple graphical information.	Read and use a straightforward scale. Interpret straightforward graphical information. Communicate straightforward graphical information.	Interpret graphical information when presented as a number of related but straightforward forms or in a complex form. Select and use appropriate forms of table, graph, chart or diagram to communicate information.	Analyse and interpret graphical information. Select and use appropriate graphical forms to communicate information.
Apply numerical skills	Apply a range of basic numerical skills in familiar everyday contexts.	Apply a range of basic numerical skills in everyday contexts.	Apply a range of basic numerical skills in everyday contexts.	Apply a wide range of numerical skills.	Apply in combination a wide range of numerical and statistical skills.