SCOTTISH QUALIFICATIONS AUTHORITY

National Unit Specification: general information

UNIT Using Mathematics 3 (Acc 3)

NUMBER D561 09

CLUSTER Mathematics (Access 3)

SUMMARY

This unit seeks to provide reinforcement in a range of basic mathematical skills, including number, information handling, measurement and shape. It is a component unit of the cluster Mathematics (Acc 3).

OUTCOMES

1. Perform calculations in everyday contexts.
2. Interpret and communicate information.
3. Use properties of shapes.
4. Use further measurement skills.

RECOMMENDED ENTRY

Entry is at the discretion of the centre.

CREDIT VALUE

1 credit at Access 3.

Administrative Information

Superclass: RB

Publication date: November 1999

Source: Scottish Qualifications Authority

Version: 02

National Unit Specification: general information (cont)

UNIT Using Mathematics 3 (Acc 3)

CORE SKILLS

This unit gives automatic certification of the following:

Complete core skills for the unit	Numeracy	Acc 3
Core skills components for the unit	None	

Additional information about core skills is published in *Automatic Certification of Core Skills in National Qualifications* (SQA, 1999).

National Unit Specification: statement of standards

UNIT Using Mathematics 3 (Acc 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

Perform calculations in everyday contexts.

Performance criteria

(a) Select and use appropriate operation(s) in context using appropriate checking procedures.
(b) Find simple percentages and fractions of quantities.

OUTCOME 2

Interpret and communicate information.

Performance criteria

(a) Interpret and use information from a bar graph, scattergraph, line graph or pictograph.
(b) Construct a bar graph, scattergraph, line graph or pictograph from given data where the scale and structure are given.
(c) Give and/or follow instructions, such as directions for a route, journey or task.

OUTCOME 3

Use properties of shapes.

Performance criteria

(a) Complete drawings using simple line symmetry.
(b) Create a tiling using a shape template.
(c) Find the area of figures by counting squares.
(d) Use a formula in words in the context of properties of shape.
(e) Recognise and name three-dimensional shapes from their two-dimensional representations.
(f) Find the volume of solids by counting cubes.

National Unit Specification: statement of standards (cont)

UNIT Using Mathematics 3 (Acc 3)

OUTCOME 4

Use further measurement skills.

Performance criteria

(a) Read straightforward scales from a variety of measuring devices.
(b) Interpret simple scales on maps where the scale is expressed in words.

Evidence requirements

Although there are various ways of demonstrating achievement of the outcomes, evidence would normally be presented in the form of a closed book test under controlled conditions. Examples of such tests are contained in the National Assessment Bank.

National Unit Specification: support notes

UNIT Using Mathematics 3 (Acc 3)

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

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

GUIDANCE ON CONTENT AND CONTEXT FOR THIS UNIT

The overall aim of mathematics provision at Access 3 level is to build confidence in the use of mathematical processes by demonstrating their relevance to everyday situations. Placing mathematical knowledge and skills in contexts which candidates can relate to should stimulate interest and encourage candidates to extend their mathematical experience.

Each of the three units has outcomes in basic number, information handling and measurement. Money outcomes span the first two units. Properties of shape in Unit 3, is the only outcome which does not span at least two units. The close connecting structure of the units at this level provides incremental progress in these basic themes for candidates taking the cluster.

In this third unit, Outcome 1 requires candidates to demonstrate competence in applications of the four basic number operations, and in using simple percentages and fractions. Interpretation and handling of information is assessed in Outcome 2 in a wide range of statistical graphs and diagrams. The topic of shape makes its introduction to Access 3 in Outcome 3, in a variety of forms including symmetry, tiling and areas and volumes. Measurement activities of Units 1 and 2 are extended in Outcome 4 to scales on instruments and maps.

The emphasis throughout the unit is on calculations within a context. Wherever possible, the contexts should be varied and linked to candidates' personal experience.

The detailed content section contains the recommended content for this unit and provides illustrative examples to indicate the depth of treatment required to achieve a unit pass and advice on teaching approaches.

GUIDANCE ON TEACHING AND LEARNING APPROACHES FOR THIS UNIT

Candidates should be encouraged throughout the unit to make use of their skills in mental calculations, to make efficient use of calculators and to apply the strategy of checking. Numerical checking or checking a result against the context in which it is set is an integral part of every mathematical process. In many instances, the checking can be done mentally, but on occasions, to stress its importance, there should be evidence of a checking procedure within the calculation. There are various checking procedures which could be used:

- relating to a context – 'How sensible is my answer?'
- estimate followed by a repeated calculation
- calculation in a different order

In the statement of particular performance criteria within units, there is a reference to appropriate checking. Checking should be integral to any mathematical process so candidates should be prepared to provide evidence of a checking procedure having been used.

National Unit Specification: support notes (cont)

UNIT Using Mathematics 3 (Acc 3)

Further advice on learning and teaching approaches is contained within the Subject Guide for Mathematics.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

The assessment of this unit will normally be in the form of a closed-book test. Such tests should be carried out under supervision. At this level the approach to assessment should be flexible, based on the needs of individual candidates. Successful achievement of the unit is demonstrated by candidates achieving the thresholds of attainment specified for all the outcomes in the unit. Candidates who fail to achieve the threshold(s) of attainment need only be retested on those outcome(s) where the outcome threshold has not been attained. Further advice on assessment and retesting is contained within the National Assessment Bank.

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 alternative outcomes for units. For information on these, please refer to the SQA document *Guidance on Special Assessment and Certification Arrangements for Candidates with Special Needs/Candidates whose First Language is not English* (SQA, 1998).