

National Unit Specification: general information

UNIT Problem Solving (Access 3)

NUMBER D01E 09

COURSE

SUMMARY

This core skills Unit seeks to develop skills in solving simple problems. A simple problem *either* involves a situation familiar to the candidate when he or she identifies some steps to solve the problem; *or* a less familiar situation where the steps are clear and given to the candidate. While tackling the problem, the candidate develops skills in analysing the problem, devising a plan to solve it, carrying out the plan and finally evaluating his or her success in solving the problem.

OUTCOMES

1. Analyse a simple problematic situation or issue.
2. Plan, organise and carry out a simple task in order to tackle the problem.
3. Review and evaluate success in tackling the problem.

RECOMMENDED ENTRY

While entry is at the discretion of the centre, candidates would normally be expected to have attained Problem Solving (Access 2)

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.*

Administrative Information

Superclass: HB

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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:

- Problem Solving at Access 3.

National Unit Specification: statement of standards

UNIT Problem Solving (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.

Note on range for the Unit

At this level, candidates should be dealing with a simple problem.

A simple problem is one which involves:

- a situation familiar to the candidate when he or she identifies at least three steps to solve the problem

OR

- A less familiar situation where the steps are clear and given to the candidate.

OUTCOME 1

Analyse a simple problematic situation or issue.

Performance criteria

- a) Recognise several obvious influences affecting the problem.
- b) Outline a task to solve the problem.

Evidence requirements

PC (a)

Oral and/or written evidence that the candidate has identified a minimum of three obvious influences affecting the problem.

PC (b)

Oral and/or written evidence that the candidate has outlined a task to solve the problem. The outline should be a course of action which the candidate recognises from previous experience.

National Unit Specification: statement of standards (cont)

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OUTCOME 2

Plan, organise and carry out a simple task in order to tackle the problem.

Performance criteria

- a) Plan a task consisting of a sequence of steps in order to tackle the problem.
- b) Select resources needed for the task.
- c) Carry out the task effectively, by using the resources and following the plan.

Evidence requirements

PC (a)

Oral and/or written evidence that the candidate has planned a task consisting of a sequence of at least three steps, usually in a familiar situation. In a less familiar situation, the steps should be clear and provided by the teacher/lecturer.

PC (b)

Evidence of actual performance which shows that the candidate has selected appropriate resources from a range which he or she recognises.

Resources may include any source materials, information, equipment, technology or facilities which might be used while carrying out the task.

PC (c)

Evidence of actual performance which shows that the candidate has decided how the task will be carried out and has then carried out the task.

OUTCOME 3

Review and evaluate success in tackling the problem.

Performance criteria

- a) Identify the strengths and weaknesses of the plan used to tackle the problem.
- b) Identify lessons learned about solving problems.

Evidence requirements

PC (a)

Oral and/or written evidence that the candidate has reviewed and evaluated how well he or she tackled the problem using simple criteria provided by the teacher/lecturer. Criteria might include use of time, personnel and material resources.

PC (b)

Oral and/or written evidence identifying at least two lessons learned by the candidate about solving problems that may be useful in the future.

National Unit Specification: support notes

UNIT Problem Solving (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 and vocational needs of the candidate.

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 Problem Solving.

This Unit provides opportunities for the automatic certification of *Problem Solving* at Access 3. Problem Solving is a collective term for the abilities that people bring to bear in tackling a wide range of issues and problems in their daily lives.

The core skill components identified within *Problem Solving* are Critical Thinking, Planning and Organising, and Reviewing and Evaluating. This *Problem Solving* Unit covers the core skill components in three outcomes.

Structure of National Units in Problem Solving Core Skills

Core skill component	Skill	Outcome
Critical Thinking	being able to analyse situations and suggest courses of action	1
Planning and Organising	being able to plan and organise work and carry it through to completion	2
Reviewing and Evaluating	being able to reflect on what has been done and to draw conclusions for the future	3

The Unit provides opportunities for candidates to develop skills in solving simple problems in familiar situations (or sometimes solving problems in less familiar situations where the steps are clear and given to the candidate).

The content and context for the Unit may be any familiar situation or issue that will interest candidates and allow them to demonstrate achievement as specified in the three outcomes. The range of contexts in which problem solving can be developed is very wide and may involve, for example: investigating; inventing; improving performance or learning; devising a study or other programme; or taking part in organising a placement, visit or other event. Such contexts can be found in virtually all curricular and vocational areas.

National Unit Specification: support notes (cont)

UNIT Problem Solving (Access 3)

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

The learning and teaching approaches should encourage candidates to identify evidence of their attainment in problem solving skills and to look for opportunities to transfer their skills to other situations in their overall curriculum and life. There should be a balance between teacher/lecturer exposition and candidates' experiential learning. Arrangements should be made to ensure that there are no artificial barriers to learning. The nature of the candidate's learning needs should be taken into account when planning learning experiences.

The three core skill components of Critical Thinking, Planning and Organising, and Reviewing and Evaluating can be seen as stages in the process of tackling issues and problems. Open-ended, investigative approaches to learning will support the development and application of these skills.

The core skill component of Critical Thinking at Access 3 is about candidates being able to analyse a simple situation or issue.

At this level, the extent to which the context is familiar to candidates is flexible. The context is either familiar with a small number of obvious, clearly-related influences on the situation, (or the situation is less familiar but with influences and relationships between them already identified and which the candidate understands).

Candidates are required to outline a task, (which is a routine, familiar course of action) to deal with the situation or issue. Candidates should recognise this course of action from their previous experiences.

Example:

Familiar situation: improving performance in a physical activity

(This time the aim is to improve swimming performance)

Influences:

- effectiveness of swimming style
- personal fitness for swimming
- opportunities to practise swimming

Outline of task:

1. identify present ability at skill
2. identify opportunities to practise skill
3. identify realistic target for improving skill
4. practise skill and check on progress towards target

National Unit Specification: support notes (cont)

UNIT Problem Solving (Access 3)

The core skill component of Planning and Organising at Access 3 is about candidates having the ability to plan, organise and complete a simple task. The candidates are expected to identify the sequence of steps in the plan (there should be at least three steps), select resources to carry out the plan, and to carry out the task.

At this level, candidates are given some flexibility in their choice of resources. Resources should be selected from either a familiar range of common resources, or from a given range of familiar resources. Resources might include sources of information, set procedures, people, equipment or physical resources. Candidates are expected to decide how the task will be organised. Then they are expected to carry out and complete the task.

Opportunities for developing Planning and Organising can occur in all curricular and vocational fields. In all cases, the development of Planning and Organising benefits from the use of open-ended approaches to learning. The teaching and learning approaches should encourage candidates to identify the evidence of their attainment and to look for opportunities to transfer their skills to other situations in their overall curriculum and life.

Example:

Simple task: improve performance in a physical activity

(This time the aim is to improve swimming performance)

Plan in simple steps:

1. identify present ability at swimming
2. identify times to practise swimming
3. identify realistic target for improving swimming
4. practise swimming and check progress towards target

Select resources:

- obtain information on access to swimming pool
- identify procedures for practising swimming
- arrange timetable of swimming practice

Carry out plan

National Unit Specification: support notes (cont)

UNIT Problem Solving (Access 3)

The core skill component of **Reviewing and Evaluating at Access 3** is about candidates having the ability to review and evaluate a simple problem solving activity.

A simple problem solving activity is one set in a familiar context involving a small number of obvious influences affecting the problem and simple task organisation. During this evaluation, candidates are expected to use simple criteria to identify strengths and/or weaknesses in how well they tackled the problem. Criteria might be appropriateness, accuracy or workability of the solution or outcome to the problem.

Example:

Simple problem solving activity: improve performance in a physical activity

(This time the aim is to improve performance in swimming)

Simple criteria for evaluating solution:

- appropriateness:
Was the target realistic, did swimming actually improve?
- workability:
Was it an easy plan to carry out, were there sufficient opportunities to practise swimming?

Strengths and weaknesses of the plan to improve swimming performance:

- appropriateness:
target realistic
swimming improved
- workability:
hard work to carry out plan
opportunities to swim but they took up too much time.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Arrangements should be made to ensure that there are no artificial barriers to assessment. The nature of candidates' special needs should be taken into account when selecting assessment instruments, and possibilities for alternative arrangements considered.

If this Unit is being used in conjunction with other Units or Courses, evidence of attainment should be gathered, wherever possible, from naturally occurring activities within these Units or Courses.

A staff observation checklist should be used where the candidate generates evidence of problem solving activities outwith the centre. The checklist may usefully provide supporting evidence for any of the activities related to Outcomes 1 – 3 and should be used accordingly.

Where the Problem Solving 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.

National Unit Specification: support notes (cont)

UNIT Problem Solving (Access 3)

Evidence should be indexed to the relevant outcome, performance criteria and evidence requirements of the *Problem Solving* Unit and should be collated and retained for assessment and moderation purposes.

Suggested assessment instruments

Outcome 1

All PCs. Responses to short answer questions, possibly in the form of an oral interview, would be suitable.

Outcome 2

PC (a). Responses to short answer questions, possibly in the form of an oral interview, would be suitable

PC (b), PC(c). Video recording, or entries in a personal log, would be suitable for recording performance evidence.

Outcome 3

All PCs. Responses to short answer questions, possibly in the form of an oral interview, would be suitable.

Information on suggested assessment instruments

Short Answer Question candidate response should consist of a few words

Oral Interview a structured conversation, generally on a one-to-one basis, eliciting information directly from the candidate. Results may be recorded in a questionnaire format.

Log candidate demonstrates outcome of learning in a particular context, entries in a log record evidence, noting aspects such as targets, dates when targets achieved, actions, contracts.

Certification of Critical Thinking, Planning and Organising, and Reviewing and Evaluating recognises that candidates have demonstrated an appropriate level of skill in a particular context and there is an implication that, in contexts that contain knowledge and understanding accessible to the candidate, transfer is reasonably likely. However, it must also be recognised that familiarity with a context influences the candidate's ability to develop and transfer the skill.

This core skill Unit is aided by National Assessment Bank materials which provide assessment materials exemplifying the evidence required for achievement of the core skill.

In cases where the candidate has had to complete a core skills Unit to meet the requirements of a Scottish Group Award, that Unit will be counted as a Unit credit within the Scottish Group Award as well as being counted towards meeting the core skills profile required.

National Unit Specification: support notes (cont)

UNIT Problem Solving (Access 3)

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).