



National Unit Specification: general information

UNIT Science: Interdisciplinary Project (Advanced Higher)

CODE F785 47

UNIT PURPOSE

This Unit aims to develop the candidate's skills and abilities as an independent learner. The prime focus of this Unit is the development of generic and cognitive skills through a science based project. The project is designed to encourage the candidate to draw on many areas of learning from across the curriculum and to make connections between science and the world in which they live, learn and work.

It should also encourage partnership working between different providers to help the candidate access different learning environments. All of these features will encourage the candidate's awareness of the value and transferability of these skills and in turn, will support the candidate's transition into Higher/Further Education and the workplace.

RECOMMENDED PRIOR KNOWLEDGE AND SKILLS

While entry is at the discretion of the centre, candidates will normally have achieved or be working towards a minimum of:

- ◆ two Advanced Higher Courses
- ◆ one Higher Course

Two of the above Courses should be in science subjects and one should be Mathematics/Applied Mathematics.

Candidates who are taking this Unit as part of the Scottish Baccalaureate in Science should refer to the Scottish Baccalaureate in Science Arrangements Document for details of eligible subjects.

Administrative Information

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ASSESSMENT

This Interdisciplinary Project Unit uses a holistic approach to assessment. It will be internally assessed and verified, but will be subject to external quality assurance by SQA. A Pass in the Project Unit will be graded A, B or C. Assessment Support Packs and marking guidelines have been produced to support the application of the national standard of achievement at Advanced Higher level.

CREDIT POINTS AND VALUE

2 SQA Unit credits at SCQF level 7: (16 SCQF credit points at SCQF level 7*).

**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.*

National Unit Specification: statement of standards

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This Statement of Standards section is mandatory: the context; the three stages of the project; the skills to be developed; the Evidence Requirements and grading approaches.

Context

The project, which must involve a science based investigation or practical assignment, will explore and bring out the relevance of science in one or more of the following broad contexts:

- ◆ employability
- ◆ enterprise
- ◆ citizenship
- ◆ sustainable development
- ◆ economic development

Candidates will use their science knowledge as the base line for the project. Skills development will take place through linking science with other disciplines and the wider world using a staged approach.

The candidate will carry out the following three stages:

Stage 1

Negotiate and plan a science based Interdisciplinary Project.

Stage 2

Carry out and evaluate the Interdisciplinary Project.

Stage 3

Review and evaluate the process of his/her own learning.

The candidate will develop and demonstrate the following generic and cognitive skills across the three stages of the project:

- ◆ **application:** of subject knowledge and understanding
- ◆ **research skills:** analysis and evaluation
- ◆ **interpersonal skills:** negotiation and collaboration
- ◆ **planning:** time, resource and information management
- ◆ **independent learning:** autonomy and challenge in own learning
- ◆ **problem solving:** critical thinking; logical and creative approaches
- ◆ **presentation skills**
- ◆ **self evaluation:** recognition of own skills development and future areas for development

EVIDENCE REQUIREMENTS FOR THIS UNIT

Centres will provide candidates with general project requirements. Candidates must provide evidence that they have carried out the three specified stages of the project in accordance with the given project requirements. Evidence of development in each of the specified generic/cognitive skills must be provided in order to pass the Unit.

National Unit Specification: statement of standards (cont)

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Candidates will choose a theme of personal and/ or career interest. In response to the given project requirements, candidates will negotiate and agree a project proposal and plan which must be signed off by the assessor before candidates proceed to implement the plan. A record of this negotiation should be signed and retained by the assessor as evidence that the candidate has successfully prepared and presented a suitable project proposal, and produced and justified a workable plan.

Evidence of achievement should be organised in a folio or e-portfolio which contains five mandatory pieces of evidence. These are:

- ◆ project proposal
- ◆ project plan
- ◆ presentation of project findings/product
- ◆ evaluation of project
- ◆ self-evaluation of generic/cognitive skills development

Evidence in the folio may be presented in any suitable recorded format including e-evidence. Evidence may be gathered at appropriate points throughout the Unit in unsupervised conditions. Assessors should maintain and retain a record of an interim review discussion for authentication purposes.

An Assessment Support Pack (ASP) for this Unit has been developed which contains general project requirements, an assessor approval form for the project proposal and plan, an assessor interim review record, marking guidance and exemplification of aspects of work. Centres who wish to develop their own records should refer to the ASP to ensure a comparable standard.

Grading

A holistic judgment will be made by assessors across all five pieces of mandatory evidence required for the Unit. The standards of competence given below and grade criteria will allow assessors to evaluate the strengths and weaknesses of each piece of evidence before arriving at a holistic judgement of the project overall.

The grades will be:

- A Indicative of a highly competent performance across the five pieces, with all pieces meeting all additional Grade A criteria.
- B Indicative of a competent Grade C performance across the five pieces, but with some aspects of work which meet the criteria for highly competent performance (as outlined by the Grade A criteria).
- C Indicative of a competent performance across the five pieces, with all aspects of the work meeting the criteria identified for Grade C performance.

National Unit Specification: statement of standards (cont)

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Standard of competence for Unit pass

In order to pass, candidates must achieve Grade C criteria for each of the five pieces of evidence.

| Grade C criteria | Grade A criteria |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All of the following must be achieved: | All Grade C criteria plus all of the following: <ul style="list-style-type: none">◆ a high degree of autonomy and initiative in carrying out all stages of the project◆ effective management of complex information throughout the project |
| The project proposal must include: <ul style="list-style-type: none">◆ clear aims and reasoned arguments to support the relevance and practicability of the project◆ identification of opportunities for<ul style="list-style-type: none">— own skills development— collaborative working— accessing less familiar learning environments— application of science subject knowledge in a broad context— use of knowledge and skills across different disciplines— making connections between subject knowledge and the wider world | <ul style="list-style-type: none">◆ well conceived proposal which sets creative and challenging goals which are at the same time realistic, achievable and practicable◆ robust and carefully argued justification of the proposal◆ substantial links and understanding of possible connections across disciplines contributing to the project |

National Unit Specification: statement of standards (cont)

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| Grade C criteria (cont) | Grade A criteria (cont) |
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| <p>The project plan must include:</p> <ul style="list-style-type: none"> ◆ development of clear project objectives in line with the project proposal ◆ relevant and detailed planning strands to enable the project to be implemented, monitored, presented and evaluated ◆ realistic timescales and achievable milestones for each stage of the project ◆ clear identification of resources needed, research methodologies to be used, opportunities for support and feedback | <ul style="list-style-type: none"> ◆ careful selection and effective use of research/investigation techniques ◆ anticipation of probable and possible factors which may impact on the project ◆ clear identification of dependencies or reliance on the success of other strands of work and of necessary adjustments to the plan ◆ outline the process for achieving own identified development needs |
| <p>Presentation of project findings/product must include:</p> <ul style="list-style-type: none"> ◆ evidence of effective and critical use of: <ul style="list-style-type: none"> — resources, research methodologies, information and time management, prioritisation, problem solving approach to reach objectives, feedback, collaborative approaches, self monitoring ◆ application of specialist and interdisciplinary subject knowledge to establish meaningful connections within the broad theme ◆ clear presentation of main findings/product | <ul style="list-style-type: none"> ◆ critical thinking, analysis and reflection used at key stages in the project to construct rigorous arguments, draw convincing, well supported conclusions, identify and resolve issues ◆ skilful and creative use of resources, including people, information and learning contexts to progress the project ◆ accurate and deepening of understanding through application of subject knowledge in the chosen context, with meaningful connections well established |
| <p>Evaluation of project must include:</p> <ul style="list-style-type: none"> ◆ a critical and justified evaluation of all stages of the project process: planning, implementation and findings/product in terms of strengths, weaknesses and learning points ◆ effective use of chosen communication method(s) | <ul style="list-style-type: none"> ◆ incisive, well balanced evaluation of the project outcome against project aims, supported convincingly by well selected evidence ◆ careful choice and skilful use of communication and presentation method(s) |

National Unit Specification: statement of standards (cont)

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| Grade C criteria (cont) | Grade A criteria (cont) |
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| <p>Self evaluation of generic/cognitive skills development must include:</p> <ul style="list-style-type: none">◆ a critical evaluation of own skills development against the list of specified generic/cognitive skills◆ a reasoned evaluation of own strengths and key goals for development in the specified list of generic/cognitive skills, which takes account of feedback sought and evidenced from others throughout the project | <ul style="list-style-type: none">◆ insightful, balanced and well structured self evaluation of own development◆ assertive and justified use of feedback from others in evaluation and identification of development areas |

National Unit Specification: guidance for centres

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GUIDANCE ON DELIVERY OF THIS UNIT

It is recommended that this Unit be delivered and assessed within the context of the Scottish Baccalaureate in Science to which it contributes.

Induction to the Unit and the first stage of the project will involve considerable teacher/tutor led support and discussion. Further information and support about delivery, assessment and Evidence Requirements for this Unit can be found in the corresponding Assessment Support Pack (ASP). The ASP for this Unit is not mandatory but is intended to give broad guidance on notional time, learning and teaching approaches, kinds of projects that may be suitable, opportunities for developing Core Skills and a range of flexible approaches to assessment, including open learning and e-assessment opportunities.

OPPORTUNITIES FOR CORE SKILLS DEVELOPMENT

Opportunities to develop aspects of Core Skills are highlighted in the corresponding Assessment Support Pack for this Unit. There is no automatic certification of Core Skills or Core Skill components in this Unit.

DISABLED CANDIDATES AND/OR THOSE WITH ADDITIONAL SUPPORT NEEDS

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website www.sqa.org.uk/assessmentarrangements

OPEN LEARNING

This Unit may be suitable for distance learning, open learning and flexible learning modes where resources permit. Centres must ensure that the national standard and conditions of assessment are applied to all candidates, regardless of mode of learning.

Opportunities for the use of e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.