



National Unit specification: general information

Unit title: Computer Games: Software Development Project
(SCQF level 6)

Unit code: H2WX 12

Superclass: CB

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Summary

This Unit is a mandatory Unit in the National Certificate in Computer Games Development at SCQF level 6. It is suitable for candidates who have an interest in working in the computer games industry. The purpose of this Unit is to consolidate candidates' knowledge and skills in designing computer games and provides opportunities for them to work individually and as part of a team in all aspects of creating a computer game or level/s of a computer game in response to a brief.

Outcomes

- 1 Contribute to the analysis phase of the computer game.
- 2 Contribute to the planning phase of the computer game.
- 3 Contribute to the design phase of the computer game.
- 4 Contribute to the software development phase of the computer game.
- 5 Review and evaluate own and others' contribution to the project.

Recommended entry

Entry is at the discretion of the centre, although basic computer skills are desirable, and completion of the NPA or NC in Computer Games Development at SCQF level 5 is recommended.

Credit points and level

2 National Unit credits at SCQF level 6: (12 SCQF credit points at SCQF level 6*)

**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.*

General information (cont)

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Core Skills

Achievement of this Unit gives automatic certification of the following Core Skills component:

Complete Core Skill None

Core Skill component Working Co-Operatively with Others at SCQF level 5

There are also opportunities to develop aspects of Core Skills which are highlighted in the Support Notes of this Unit specification.

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 SQA.

Outcome 1

Contribute to the analysis phase of the computer game.

Performance Criteria

- (a) Co-operate as part of the development team, sharing and agreeing on ideas, working practices, rules and responsibilities for each member.

In collaboration with team members:

- (b) Discuss the requirements of a given brief and identify the target market.
- (c) Create a game specification for the team which includes rules, objectives and goals.

Outcome 2

Contribute to the planning phase of the computer game.

Performance Criteria

In collaboration with team members:

- (a) Prepare a work schedule to be used by the team in the design and software development phases.
- (b) Identify the practical skills, software and other resources required to create the game.
- (c) Allocate the roles and responsibilities of each team member in the design and software development phases taking into account strengths and preferences.
- (d) Identify and agree own tasks and timelines in the design and software development phases.

Outcome 3

Contribute to the design phase of the computer game.

Performance Criteria

Carry out individual and team tasks as agreed to:

- (a) Create graphical user interfaces and flowcharts.
- (b) Design interfaces and menus.
- (c) Design textual and graphical software documentation.

National Unit specification: statement of standards (cont)

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Outcome 4

Contribute to the software development phase of the computer game.

Performance Criteria

Carry out individual and team tasks as agreed to:

- (a) Prepare all necessary resources to create objects and levels of the game.
- (b) Implement all necessary control structures and data structures.
- (c) Implement design algorithms into program code and test the code.
- (d) Implement version control.
- (e) Produce a working computer game or game level/s to meet the requirements of the brief.

Outcome 5

Review and evaluate own and others' contribution to the project.

Performance Criteria

- (a) Review own contribution to the project taking into account feedback from others.
- (b) Review a team member's contribution to the project.
- (c) Identify personal and team strengths and weaknesses in carrying out the project.
- (d) Identify what improvements could be made to own and others' contribution and to the game.

National Unit specification: statement of standards (cont)

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Evidence Requirements for this Unit

Written/oral/product evidence is required to demonstrate that candidates have achieved all Outcomes and Performance Criteria. Candidates will be assessed on how they completed their individual tasks particularly in relation to time management, and their ability to work effectively as part of a team focusing on *Communication* and *Problem Solving* skills.

Each candidate should submit the following for assessment:

- ◆ record of individual contribution to team discussions relating to analysis, planning, design and software development phases of the project
- ◆ record of all team discussions
- ◆ game specification
- ◆ production schedule identifying team members, roles, tasks and timelines
- ◆ list of resources required
- ◆ design plans for graphical user interfaces and flowcharts
- ◆ design plans of interfaces and menus
- ◆ design plans for textual and graphical software documentation
- ◆ design plans for objects and levels
- ◆ control structures and data structures
- ◆ code for design algorithms
- ◆ code test results
- ◆ working computer game
- ◆ peer review
- ◆ analysis of game project and individual contribution

National Unit specification: support notes

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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 80 hours.

This Unit is aligned to the following Skillset National Occupational Standards (NOS):

- ◆ IM2 Obtain Assets for Use in Interactive Media Products
- ◆ IM3 Prepare Assets for Use in Interactive Media Products
- ◆ IM5 Design User Interfaces for Interactive Media Products
- ◆ IM6 Use Authoring Tools to Create Interactive Media Products
- ◆ IM7 Code Scripts to Provide Functionality for Interactive Media Products
- ◆ IM8 Determine the Implementation of Designs for Interactive Media Products
- ◆ IM12 Devise and Evaluate User Testing of Interactive Media Products
- ◆ IM13 Conduct User Testing Of Interactive Media Products
- ◆ IM15 Write and Edit Copy for Interactive Media Products
- ◆ IM16 Plan Content for Web and Multimedia Products
- ◆ IM20 Design Electronic Games
- ◆ IM21 Program Electronic Games
- ◆ IM22 Test Electronic Games

Guidance on the content and context for this Unit

In this Unit, candidates are required to develop a computer game or levels of a game. The Unit is designed to reflect standard working practices of computer game developers.

The object of the Unit is to allow candidates to carry out a group project, to develop Core Skills particularly *Working with Others*, *Communication* and *Problem Solving*, and to develop other collaborative skills essential in a professional environment.

Candidates will develop a range of documentation to support their own and their team's performance throughout the project. They will complete the project with a personal evaluation of their own and a peer's contribution, as well as reflecting on the overall performance of the team's collective ability to deliver a working computer game in accordance with the requirements of the brief.

The Unit has been created as a mandatory Unit in the NC Computer Games Development framework at SCQF level 6 and is designed to build on the Units contained within that framework. As such it is not recommended as a standalone Unit.

National Unit specification: support notes (cont)

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Guidance on learning and teaching approaches for this Unit

Practical activities should be assessor-led and techniques and processes should be clearly explained, demonstrated and understood by candidates prior to them undertaking the practical tasks. Briefs to create working computer games should be provided by the assessor or centre. There is an opportunity for candidates working on the software development project to work with those undertaking the creative project.

Outcomes 1 and 2 — Assessors should encourage candidates to investigate and discuss a number of possible game designs. Candidates should discuss roles and responsibilities of team members from their knowledge of the games industry. Each team member could propose who they feel would be the most appropriate team member to take on specific tasks, and this could be discussed by the group prior to the allocation of roles and responsibilities. All candidates should be involved in each different phase of the project, and should keep records of all team meetings, highlighting their individual contribution to each phase of the project as follows:

- ◆ analysis of what is involved in the games project
- ◆ definition of roles and responsibilities within the team
- ◆ management rules for the team
- ◆ list of software intended to use
- ◆ list of hardware intended to use
- ◆ intended design and development processes
- ◆ identified milestones

Outcomes 3 and 4 — Candidates design and develop code, documents and test programs to create a computer game or levels of a game. The design and development should include objects, eg characters and backgrounds, and should include implementation of algorithms and programming code. All candidates should contribute to this part of the process, and carry out their own tasks to agreed timelines.

Outcome 5 — Candidates should use reflective practices to review their own contribution, the performance of one other team member and the performance of the team overall in relation to development process. This could take the form of an individual evaluation report which includes:

- ◆ strengths and weaknesses of working within a team
- ◆ reflection on individual contribution
- ◆ reflection on a team members' contribution
- ◆ reflection on co-operative working and the impact on version control
- ◆ improvements that could be made to their own contribution
- ◆ improvements that could be made to team working

National Unit specification: support notes (cont)

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Guidance on approaches to assessment for this Unit

This Unit involves candidates working as part of a team to plan, design and produce a computer game, or levels of a computer game. It is intended for candidates wishing to progress in the software development side of the computer games industry. Candidates should be assessed on their individual contribution to a team project designing an animated computer game to a specified brief.

Holistic assessment of the project is recommended. Assessors could use a checklist to evaluate how well individual candidates completed their own tasks, how well they adhered to agreed roles and responsibilities, managed time and delivered the requirements of the brief. Candidates should also be assessed on how well they worked with others — their *Communication*, collaboration and *Problem Solving* skills, and their overall contribution to the effectiveness of the team.

Each team member should present a folio containing documentation and digital files relating to the project, together with their individual evaluation reports. Individual records could take the form of a blog and team records could be presented as wikis or video diaries. The use of electronic media should be encouraged, however other appropriate methods of maintaining accurate records are acceptable, eg written minutes of meetings. Each individual candidate should submit a copy of the game specification and work schedule produced by the team as well as the finished working game. They should also provide evidence of their own contributions to the design and software development phases by clearly showing how they carried out their individual tasks. Candidates should NOT be assessed on their creative skills.

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 social software. 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)*.

Opportunities for developing Core Skills

There is no automatic certification of Core Skills or Core Skill components in this Unit. However, *Problem Solving* (Outcome 1 — planning) and *Information and Communication Technology* (Outcomes 2 and 3) will contribute to Core Skills development.

National Unit specification: support notes (cont)

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This Unit has the Working Co-operatively with Others component of Working with Others embedded in it. This means that when candidates achieve the Unit, their Core Skills profile will also be updated to show they have achieved Working Co-operatively with Others at SCQF level 5.

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

History of changes to Unit

Version	Description of change	Date
02	Core Skills Component Working Co-operatively with Others at SCQF level 5 embedded.	05/02/2013

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