Group Award Specification for:

National Certificate in

Computer Games:
Software Development at

SCQF level 6

Group Award Code: GG45 46

and

National Certificate in

Computer Games:
Creative Development at

at SCQF level 6

Group Award Code: GG44 46

Validation event: 26 September 2012

Date of original publication: March 2013

Version: 04

Acknowledgement

History of changes

It is anticipated that changes will take place during the life of the qualification, and this section will record these changes. This document is the latest version and incorporates the changes summarised below.

Version number	Description	Date
04	**Revision of unit code:** Unit code is updated for the following unit: Media: Creating Media Content H238 76 (J29A 76) The unit content and assessment for all of the units is unchanged.	September 2019
03	**Revision of Unit:** Computer Games: Design (F915 12) has been revised by Computer Games: Design (HX9V 46) and will finish on 31/07/2020 **Revision of Unit:** Computer Games: Media Assets (F916 12) has been revised by Computer Games: Media Assets (HX9W 46) and will finish on 31/07/2020 **Revision of Unit:** Computer Games: Development (F917 12) has been revised by Computer Games: Development (HX9X 46) and will finish on 31/07/2020	May 2018
02	**GG45 46-Computer Games: Software Development** X206 12 Course Assessment Computing has been revised by X716 76 Course Assessment Computing Science and will finish on 31/07/2016. X100 12 Course Assessment Mathematics: Maths 1, 2 and 3 has been revised by X747 76 Course Assessment Mathematics and will finish on 31/07/2016. **GG44 46- Computer Games: Creative Development** X223 12 Course Assessment Art and Design has been revised by X704 76 Course Assessment Art and Design and will finish on 31/07/2016. X206 12 Course Assessment Computing has been revised by X716 76 Computing Science Course Assessment and will finish on 31/07/2016. **Revision of Unit**: DF16 12 Media Production has been revised by H238 76 Creating Media Content *and will finish on* 31/07/2016.	December 2014

Contents

1   Introduction

These new group awards in Computer Games Development at SCQF
level 6 build on the foundation provided by the National Progression
Awards in Computer Games Development at SCQF levels 4, 5 and 6 and
the NC in Computer Games Development at SCQF level 5. As such, these
new awards join a family of qualifications relating to computer games.[1]

They focus on the technical and creative skills desired by employers, in
the computer games industry and in the wider creative digital media and
software development sectors. The awards have also tried to encompass
some of the softer skills regarded as important in the computer games
industry including communication, team working and an understanding of
the role of enterprise.

Initially proposed as a single award in Computer Games Development at
SCQF level 6, key stakeholders in the computer games industry and HE
practitioners influenced the decision to design separate frameworks that
allowed candidates to begin to specialise in either software development
or art and design for computer games.

The frameworks are therefore structured so that candidates can progress
down either route, and have their chosen specialism reflected in the title of
the National Certificate they achieve. The core Units of the Computer
Games: Creative Development award focus on the animation and design
elements of computer games, while the core Units in the Computer
Games: Software Development award reflect STEM subjects.

As both qualifications incorporate the National Progression Award in
Computer Games Development at SCQF level 6 in the mandatory
sections, successful candidates will also gain separate certification for the
NPA on completion of its three Units in Computer Games: Design; Media
Assets; Development, as well as a National Certificate on completion of
the full award. Candidates could then progress to SCQF level 7 as the
distinct awards have been designed to meet articulation requirements of a
number of HNCs and first year university level courses. Equally important,
it is hoped that successful candidates gain a useful skillset, leading directly
or indirectly to work in the computer games industry, and also relevant for
work in other sectors.

2   Rationale

The UK and Scotland in particular has built up a strong computer games
industry and is seen as a global leader in the sector. The industry is a
major contributor to the UK economy with over £2 billion worldwide sales
(Next Gen. A Review by Ian Livingstone and Alex Hope, 2012).

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[1] See the Rationale section for a diagram illustrating the relationship between these awards.

A number of courses within the HE sector reflect that strength in the computer games courses they run from both the creative and the software development sides of the industry. The industry is constantly changing and is highly integrated with emerging technologies such as the smartphone and social networks.
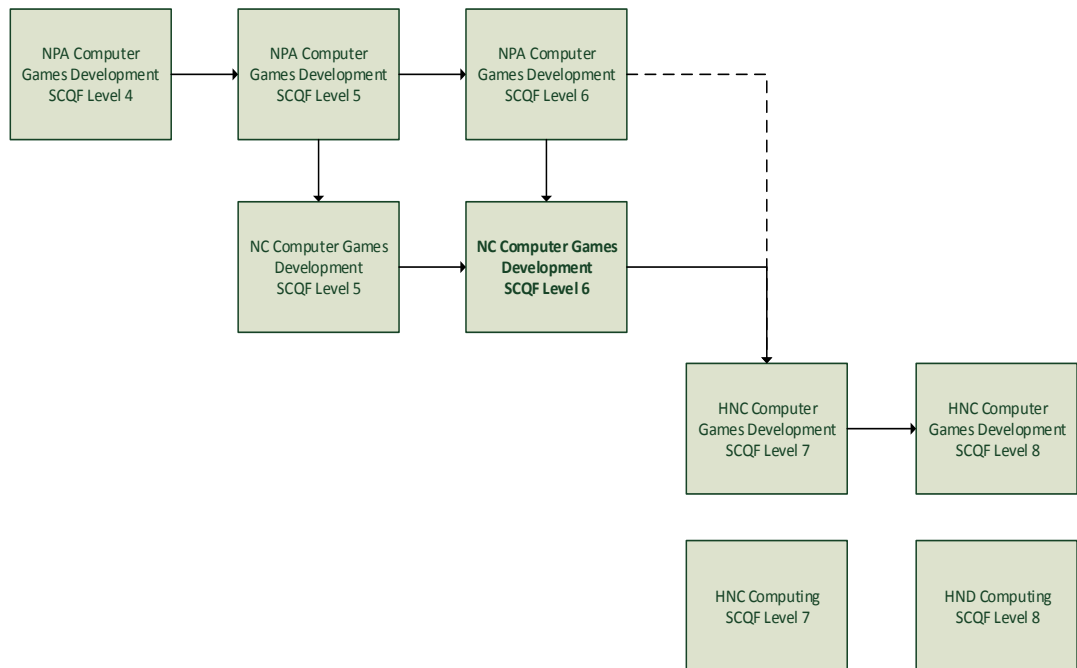
However, like other technology-based sectors, the computer games industry has some serious skills shortages and sees the key to success in the development of Science, Technology, Engineering and Maths (STEM) subjects as well as art, animation and design. In particular employees are sought with qualifications in more rigorous computer science and programming skills which high-tech industries need.

The computer games industry is looking for job ready graduates with specialist skills and good understanding of the production processes, games software (animation and programming) as well as the soft skills needed to succeed in the industry. It is recognised that candidates need exposure to these skillsets before they embark on their specific HE courses. Qualifications should be provided for candidates at school and college in preparation for articulating onto HE and then into the industry itself.

The new frameworks are shaped to accommodate that articulation from school and college into HE courses. The framework of the NC in Computer Games Development at SCQF level 5 provides a great deal of flexibility around its core Units for both creative and software development. It was designed at this level to introduce candidates to a wide range of subjects and allow them to change paths as their own skills profile emerged.

The frameworks of the NCs in Computer Games Development at SCQF level 6 still provide flexibility but include specialist skills reflecting the need to articulate onto college and university courses and to work in the computer games industry. The creative framework gives candidates a platform to possibly progress into other creative industries. The software development framework incorporates the STEM subjects of Mathematics and Programming in its core.

These awards will become part of the family of games-based qualifications offered by SQA. The suite of awards, including the two National Certificates proposed here, is illustrated in the following diagram.

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┌────────────────┐    ┌────────────────┐    ┌────────────────┐
│  NPA Computer  │    │  NPA Computer  │    │  NPA Computer  │ ┄ ┄ ┄ ┐
│Games Development│──▶│Games Development│──▶│Games Development│      ┊
│  SCQF Level 4  │    │  SCQF Level 5  │    │  SCQF Level 6  │      ┊
└────────────────┘    └────────┬───────┘    └────────┬───────┘      ┊
                               │                     │              ┊
                               ▼                     ▼              ┊
                      ┌────────────────┐    ┌────────────────┐      ┊
                      │NC Computer Games│   │NC Computer Games│     ┊
                      │  Development   │──▶│  Development     │──────┤
                      │  SCQF Level 5  │    │  SCQF Level 6  │      ┊
                      └────────────────┘    └────────────────┘      ┊
                                                                    ▼
                                              ┌────────────────┐    ┌────────────────┐
                                              │  HNC Computer  │    │  HNC Computer  │
                                              │Games Development│──▶│Games Development│
                                              │  SCQF Level 7  │    │  SCQF Level 8  │
                                              └────────────────┘    └────────────────┘

                                              ┌────────────────┐    ┌────────────────┐
                                              │ HNC Computing  │    │ HND Computing  │
                                              │  SCQF Level 7  │    │  SCQF Level 8  │
                                              └────────────────┘    └────────────────┘
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SQA was the first awarding body in the UK to introduce national qualifications in this subject area when it developed the HNC in Computer Games Development in 2005. Since then a number of lower- and higher-level awards have been devised (see diagram above).

2.1   Consultation with Employers

Members of the computer games industry were consulted extensively throughout this development and their expertise helped shape both awards. This consultation took the form of electronic correspondence, one to one interviews and using the most current published research into the present UK computer games sector. The lead developer spent time within a computer games company and shadowed various roles within the organisation.

The feedback obtained from industry was used when creating two distinct awards. It highlighted the need for a project to be integral to both awards to contextualise the technical skills candidates were to undertake.

As vocational qualifications it is important that candidates obtain the foundations and basic skillsets for potential employment within the computer games industry. In designing these awards, strong consideration was given to providing candidates with an opportunity to develop the skillsets identified by employers as key to success within the computer games industry regardless of whether the candidate continued in education.

2.2 Consultation with HE establishments

A number of universities were contacted in the process of creating the awards. Their feedback reinforced the need for two distinct awards. The two different strands of their courses required different skillsets from their entrants. For the creative courses both 2D and 3D animation formed part of the core whilst for software development based courses both Maths and Programming were a prerequisite.

Specific universities showed interest in the developments articulating onto their first year games courses. Both Glasgow Caledonian and Abertay Universities welcomed the development but insisted that Mathematics Higher was still needed to gain access to their first year Games (Software Development) courses. Mathematics and Computing Highers were added as options in the Software Development award. Art and Computing Highers were added as options to the Creative Development award. University of the West of Scotland believed successful completion of either framework could result in gaining entry into their first year games courses in either design or software development. A list of possible HE and FE courses in Scotland is attached in Appendix 1.

2.3 Consultation with FE and schools

The Qualification Design Team had direct representation from the school sector and further input received from members of the development team for the new national Computing qualifications to ensure that the awards could, if possible, dovetail strands in Curriculum for Excellence. The frameworks are designed to give maximum opportunities for delivery in both schools and FE colleges. There is also scope for the awards to be delivered jointly between schools and colleges. It is believed that these awards present excellent opportunities for cross-curricular activity, so embracing the principles of Curriculum for Excellence, and for closer collaboration between schools and the FE sector.

The colleges were represented both in the core and extended qualification design team with a mix of members from both specialist areas. A balance was sought between giving candidates a strong skillset within a particular area whilst leaving as wide a range of articulation routes as possible. By splitting into two awards the frameworks are replicating the two main areas of the games industry (creative and software development).

2.4 Links to STEM

This award addresses the national refocusing of the curriculum on STEM subjects. A member of the QDT was given specific responsibility to address the issues raised in relation to STEM. The computer games industry in common with the entire IT industry has seen a skills shortage specifically in Mathematics and Computer Programming. To gain employment in these industries and to succeed in the HE courses that take them there then STEM subjects along with Art are perceived as a key to success in future (Next Gen. Review, 2012).

This emphasis on STEM subjects resulted in the decision to make both mathematics and programming Units mandatory to the Computer Games: Software Development framework. Existing and new STEM based Units were added to the optional Units providing centres with the flexibility to customise the award but with a solid STEM-based core.

2.5 Links to Curriculum for Excellence

A member of the QDT was given special responsibility for ensuring the team's work was compatible with CfE. The team was briefed about the implications of the new curriculum and the Units produced within the frameworks address the four capacities of:

♦ Successful learners
♦ Confident individuals
♦ Responsible citizens
♦ Effective contributors

The frameworks are designed in such a way to give two distinctive awards but with maximum flexibility within each to offer candidates greater choice.

2.6 Links to Core Skills

A member of the QDT team was responsible for ensuring that each of the five Core Skills was signposted in the awards, with components of Numeracy embedded in the new Mathematics for Computer Games Unit. A full table showing correlation between Units and Core Skills is attached in Appendix 2.

The recommended entry for candidates is Core Skills at SQCF level 5 which could be obtained by successful completion of the NC in Computer Games Development at SCQF level 5 or other equivalent qualifications. Below is a table detailing both the recommended entry and exit profiles.

Core Skill Units	Recommended Entry	Mandatory Exit
Communication	Intermediate 2 (SCQF 5)	Higher (SCQF 6)
Information and Communication Technology	Intermediate 2 (SCQF 5)	Higher (SCQF 6)
Numeracy	Intermediate 2 (SCQF 5)	Higher (SCQF 6)
Working with Others	Intermediate 2 (SCQF 5)	Higher (SCQF 6)
Problem Solving	Intermediate 2 (SCQF 5)	Higher (SCQF 6)

2.7 Links to National Occupational Standards (NOS)

Skillset are responsible for developing and maintaining NOS for Computer Games and Interactive Media. They outline the specific skills needed within the entire sector. Most of the Units map to specific standards. All of the Units were crafted to give candidates the skillsets needed to progress in the computer games industry. (See Appendix 3)

2.8 Summary

The computer games industry incorporates technological innovation as well as creative excellence. The jobs within the industry can broadly be categorised along the two lines of creative or software development.

The industry needs maths and software development alongside animation and design skills.

These two frameworks are designed to enable candidates to gain the relevant skillsets needed to progress further in their chosen area. The skillsets involved in both frameworks are transferrable and provide opportunities for candidates to branch into wider aspects of software development and the creative industries.

They are designed with the candidate in mind and whilst it is envisaged that most will progress onto further and higher education computer games courses it is entry into the industry itself which is the primary focus. At each stage the feedback from industry helped shape the final awards.

3 Aims of the Award

The overarching aim of the NCs in Computer Games Development at SCQF level 6 is to provide candidates an opportunity to develop the knowledge and skills required to work in the computer games industry. It is intended that by focusing on two separate awards candidates can specialise in the area of their choice.

3.1 Principal Aims of Creative framework

- Develop an understanding of the how the computer games industry works
- Develop the Core and soft skills needed to succeed in the computer games industry
- Develop candidates' design and animation skills
- Develop candidates' art skills in the context of computer games
- Develop candidates' creativity and creative strategies
- Reflect modern and emerging technologies which require new skillsets.
- Enable progression into FE/HE courses in computer games and creative industries.

3.2 Principal Aims of Software Development framework

♦ Develop an understanding of the how the computer games industry works
♦ Develop the Core and soft skills needed to succeed in the computer games industry
♦ Develop candidates' software design and development skills
♦ Develop candidates maths skills in the context of computer games
♦ Develop candidates' problem solving strategies
♦ Reflect modern and emerging technologies which require new skillsets.
♦ Enable progression into FE/HE courses in computer games and IT industries.

3.3 Principal Aims: Structure and Progression

The principal aims of each award are to equip candidates with a wide range of up to date skills relevant to the computer games industry. These skills would not be exclusive to the computer games industry but transferrable to other areas of the creative and the software development sectors. Each of the Units is mapped to NOS where applicable to ensure that industry needs are met.

The structures of both awards reflect a balance between the skillsets sought by employers in the computer games industry whilst giving centres sufficient flexibility in the Units they deliver. Each award has six mandatory Units worth 7 SQA credits and the candidate needs to complete a further five single credit Units from a list of options.

4 Recommended Access

As with all SQA qualifications, access will be at the discretion of the centre. The following recommendations are for guidance only.

There are a number of groups who would benefit from these awards:

♦ Candidates progressing from the NC in Computer Games Development at SCQF level 5 who wish to focus on a specific area at SCQF level 6.
♦ School pupils/leavers who wish to gain the necessary skillset needed to either directly or after further study gain employment within the computer games industry.
♦ Adults who wish to gain the necessary skillset needed to either directly or after further study gain employment within the computer games industry.

Whilst it would be advantageous for candidates to have reached SCQF level 5 qualifications or equivalent it is the centre's decision whether a candidate would be able to achieve the award. The qualifications/Units listed below may be considered suitable for entry:

NC Computer Games: Creative Development

♦ National Certificate in Computer Games Development at SCQF level 5
♦ National Progression Award in Computer Games Development at SCQF level 5
♦ F1KB 11 *Computing: Animation Fundamentals*
♦ FN91 11 *3D Modelling and Animation: An Introduction*
♦ Art and Design Units at SCQF level 5
♦ Core Skills Units at SCQF level 5

NC Computer Games: Software Development

♦ National Certificate in Computer Games Development at SCQF level 5
♦ National Progression Award in Computer Games Development at SCQF level 5
♦ Mathematics Units at SCQF level 5
♦ X206 11 *Computing*
♦ FN8R 11 *Games Programming*
♦ Core Skills Units at SCQF level 5

Combinations of relevant National Qualifications, Vocational Qualifications and equivalent qualifications from other awarding bodies may also be acceptable, as would suitable vendor qualifications at an appropriate level.

Mature candidates with suitable work experience may be accepted for entry provided the enrolling centre believes that the candidate is likely to benefit from undertaking the award.

It would be advisable for all candidates to have some prior knowledge of computing or information technology although formal qualifications may not be necessary if suitable experience has been gained informally or through work experience.

5   Structure of the qualifications

Main structure of awards

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. The National Certificates in Computer Games: (Creative and Software Development) at SCQF level 6 consist of 12 credits (72 SCQF points) to meet the design principles for SQA National Certificates.

There are two separate frameworks each with six mandatory Units totaling 7 SQA credits (42 SCQF credit points). An additional five Units (5 SQA credits/30 SCQF credit points) should be selected from the option table relevant to each award to make up the 12 SQA credits (72 SCQF credit points) needed to make up a National Certificate award.

NC Computer Games: Software Development

Mandatory section

Unit title	Code	SQA Credit	SCQF level	SCQF credit points
Computer Games: Software Development Project	H2WX 12	2	6	12
*Computer Games: Design	HX9V 46	1	6	6
*Computer Games: Media Assets	HX9W 46	1	6	6
*Computer Games: Development	HX9X 46	1	6	6
Computer Games: Programming	H2CD 12	1	6	6
Mathematics for Computer Games	H1NC 12	1	6	6

*please refer to history of changes for unit revision detail

Optional Section

Unit title	Code	Credit Value	SCQF level	SCQF credit points
Working in the Computer Games Industry	H2WY 12	1	6	12
Computer Games: User Centred Design	H1KR 12	1	6	6
Computer Gameplay	H2X1 12	1	6	6
Computer Games: Character Creation	H2X0 12	1	6	6
Artificial Intelligence for Games	H1ND 12	1	6	6
*Mathematics	X716 76	1	6	6
Mobile Game Development	FN8X 11	1	5	6
Games Interface Design	FN90 11	1	5	6
*Computing Science	X716 76	1	6	6
Enterprise Activity	D36N 11	1	5	6
Creative Thinking and Goal Setting	DV91 11	1	5	6

Unit title	Code	Credit Value	SCQF level	SCQF credit points
Gameplay	FN8P 11	1	5	6
Artificial Intelligence for Games	FN8V 11	1	5	6
Mathematics for Interactive Computing	FN84 11	1	5	6
Games Programming	FN8R 11	1	5	6

NC Computer Games: Creative Development

Mandatory section

Unit title	Code	Credit Value	SCQF level	SCQF credit points
Computer Games: Creative Development Project	H2WW 12	2	6	12
*Computer Games: Design	HX9V 46	1	6	6
*Computer Games: Media Assets	HX9W 46	1	6	6
*Computer Games: Development	HX9X 46	1	6	6
Computer Games: 3D Modelling and Animation Skills	H2CF 12	1	6	6
Computer Games: 2D Animation Skills	H2CE 12	1	6	6

*please refer to history of changes for unit revision detail

Optional Section

Unit title	Code	Credit Value	SCQF level	SCQF credit points
Working in the Computer Games Industry	H2WY 12	1	6	12
Computer Games: User Centred Design	H1KR 12	1	6	6
Computer Gameplay	H2X1 12	1	6	6
Computer Games: Programming	H2CD 12	1	6	6
Computer Games: Character Creation	H2X0 12	1	6	6
Art and Design: Animation Project	F5C6 12	1	6	6
Art and Design: 3D Skills Development	F5CC 12	2	6	12

Unit title	Code	Credit Value	SCQF level	SCQF credit points
Art and Design: Digital Media	F5CH 12	1	6	6
*Creating Media Content	*J29A 76	1	6	6
Enterprise Activity	D36N 11	1	5	6
Creative Thinking and Goal Setting	DV91 11	1	5	6
Digital Media: Still Images	F3T5 12	1	6	6
Digital Acquisition and Editing: Video	F3T6 12	1	6	6
Digital Acquisition and Editing: Audio	F3T7 12	1	6	6
Narrative Design and Development	FN8T 11	1	5	6
*Art and Design	X704 76	1	6	6
Character Creation	FN8Y 11	1	5	6
Mobile Game Development	FN8X 11	1	5	6
Games Interface Design	FN90 11	1	5	6
Games Programming	FN8R 11	1	5	6
*Computing Science	X716 76	1	6	6
Art and Design: Line and Tone Techniques	F5CB 12	1	6	6
Developmental Drawing	DV96 34	1	7	8

Rationale of Mandatory Sections

Flexibility was sought by minimizing the mandatory section of each award whilst ensuring that both were distinctive and would accomplish the necessary depth expected for industry needs and for progression onto higher level courses.

The mandatory section of each award contains the NPA in Computer Games Development at SCQF level 6, meaning that on successful completion of the NC Group Award candidates would receive a certificate for the National Progression Award as well.

The mandatory section of the Computer Games: Creative Development award has two Units in both 2D and 3D animation and modeling. Both these Units are seen as essential prerequisites if candidates wish to progress in the creative side of computer games development.

The mandatory section of the Computer Games: Software Development award has Units in Mathematics and Programming. This is due to feedback from the computer games industry representatives who identified high demand for this knowledge to progress in the software development side of computer games creation. With government initiatives encouraging use of STEM subjects they are also likely to be prerequisites to articulate to other FE and HE courses.

Both awards have a double credit project Unit as part of their mandatory sections. The project Units allow candidates to incorporate the knowledge and skills gained through the other mandatory and optional Units, work as part of a team, and evaluate their individual and their peers' contributions to the creation of games, reflecting the roles and working methods of the current computer games industry. It is designed as a team project where candidates work together to allocate tasks, set deadlines, present ideas and products and develop enterprise skills.

Rationale of Optional Sections

There are a number of optional Units offered in each of the Computer Games Development awards and they are chosen carefully to provide flexibility as well as retaining each award's distinctive focus. Several new units at SCQF level 6 were created specifically for these new awards, some present in both frameworks eg H1KR 12 *Computer Games: User Centred Design*; H2X1 12 *Computer Gameplay*; H2WY 12 *Working in the Computer Games Industry* whilst others were created specifically as either software development or creative options, eg: H1ND 12 *Artificial Intelligence for Games* (Software Development) and H2X0 12 *Computer Games: Character Creation* (Creative).

A number of existing Units at SCQF levels 5, 6 and 7 are in the respective optional sections, with Highers in Mathematics, Computing and Art and Design also included, allowing flexibility in delivering the awards at both colleges and schools or in collaboration.

Summary

Candidates will not be able to gain both awards simultaneously.

The awards are structured to ensure that each one can be delivered on a full time or part time basis.

The mandatory sections are structured to ensure each award is distinctive but that the optional section provides a number of different Units at different levels to provide maximum flexibility.

The structure of the awards ensures that candidates can develop an understanding of the computer games industry and can gain the core and soft skills identified as key to succeed within it.

The structure of the Computer Games: Creative Development award ensures they gain the design and animation skills to progress further.

The structure of the Computer Games: Software Development award ensures they gain the software design, programming and maths skills to progress further.

6 Approaches to Delivery and Assessment

This section deals with the delivery and assessment of these proposed awards.

6.1 Content and Context

The contents of these new awards have been updated to reflect contemporary technologies and methodologies.

- Increased focus on STEM subjects in computing qualifications, specifically Maths and Programming.
- Increased focus on encouraging creativity within Computing qualifications.
- Increased focus on user centred design
- Increased use of mobile technology
- Increased focus on soft skills and workplace processes
- Increased focus on use of social networks

Both awards have been shaped using guidance from the FE and HE sectors as well as a number of industry representatives. The emphasis is on group based project work with both frameworks having a group project as the cornerstone of the awards.

6.2 Delivery

Although the Units can be delivered on a standalone basis, it is recommended that a holistic delivery approach is adopted. Both frameworks encourage candidates to produce a portfolio of work throughout the year which could be used as the basis for their final project.

The Group Awards are primarily intended for full time candidates and are designed in such a way that centres could deliver one award or both. The awards incorporate the NPA in Computer Games Development at SCQF level 6 and could be delivered in schools and colleges or a combination of both. This development has tried to allow opportunity for schools and the FE sector to liaise more closely to deliver awards such as these.

The frameworks are designed so that the Units complement each other and enable a coherent pathway. There are a number of opportunities to integrate learning and assessment across both NC frameworks, for example in the following Units:

Computer Games: Design	Computer Games: User Centred Design			
Working in the Computer Games Industry	Computer Games: Project Units			
Computer Games: Character Creation	Computer Games: 2D Animation Skills	Computer Games: 3D Modelling and Animation		
Computer Games: Development	Computer Games: Programming	Artificial Intelligence for Computer Games	Mathematics for Computer Games	Computer Gameplay

There are a number of other opportunities for integration and Units could be assessed by a portfolio (paper or digital). Candidates could construct the portfolio over a period of time and covering a number of Units. This portfolio could be used both by the assessor and also the candidates themselves as a foundation for completing their team project.

Although it is at the centre's discretion which order the Units for both awards are delivered there are a number of Units which would benefit from preceding others. For example Units in the NPA follow a logical order:

♦ Computer Games: Design
♦ Computer Games: Media Assets
♦ Computer Games: Development

On a practical level the team project is designed to build on previous knowledge so should be delivered towards the end of the course. Candidates should build up knowledge and confidence through other Units in preparation for the Project Unit, where a closely simulated working computer games studio environment should be mirrored.

Below is an example of how the Computer Games: Software Development award could be delivered in a 3 Block Year:

Block 1

Unit title	Code	Credit Value	SCQF level	Mandatory /Optional
Computer Games: Design	HX9V 46	1	6	M
Computer Games: Media Assets	HX9W 46	1	6	M
Computer Games:User Centred Design	H1KR 12	1	6	O
Computer Games: Programming	H2CD 12	1	6	M

Block 2

Unit title	Code	Credit Value	SCQF level	Mandatory /Optional
Computer Games: Development	HX9X 46	1	6	M
Working in the Computer Games Industry	H2WY 12	1	6	O
Artificial Intelligence for Games	H1ND 12	1	6	O
Mathematics for Computer Games	H1NC 12	1	6	M

Block 3

Unit title	Code	Credit Value	SCQF level	Mandatory /Optional
Computer Gameplay	H2X1 12	1	6	O
Creative Thinking and Goal Setting	DV91 11	1	5	O
Computer Games: Creative Development Project	H2WW 12	2	6	M

In this example the NPA is delivered over the first two blocks. Design Units, Programming, Artificial Intelligence and Maths are also delivered, leaving the third block as an opportunity for the candidate to focus on the team project and skills previously learned.

Below is an example of how the Computer Games: Creative Development award could be delivered in a 3 Block Year:

Block 1

Unit title	Code	Credit Value	SCQF level	Mandatory /Optional
Computer Games: Design	HX9V 46	1	6	M
Computer Games: Media Assets	HX9W 46	1	6	M
Computer Games: Character Creation	H2X0 12	1	6	O
Computer Games: 2D Animation Skills	H2CE 12	1	6	M

Block 2

Unit title	Code	Credit Value	SCQF level	Mandatory /Optional
Computer Games: Development	HX9X 46	1	6	M
Working in the Computer Games Industry	H2WY 12	1	6	O
Computer Games: 3D Animation and Modelling Skills	H2CF 12	1	6	O
Narrative Design and Development	FN8T 11	1	5	O

Block 3

Unit title	Code	Credit Value	SCQF level	Mandatory /Optional
Computer Gameplay	H2X1 12	1	6	O
Creative Thinking and Goal Setting	DV91 11	1	5	O
Computer Games: Creative Development Project	H2WW 12	2	6	M

In this example the NPA is delivered over the first two blocks. 2D and 3D animation are delivered in the first two blocks as well as character creation leaving the third block to focus on the team project.

6.3 Assessment

There are opportunities to contextualise and integrate assessment.

It is recommended that all teaching and assessment is done in the context of computer games. For example, the Maths Units in the awards are best delivered by using relevant examples based on computer games. Assessments can be integrated internally (within a Unit) and externally (between Units). Internal integration has been achieved by minimizing the evidence requirements, which often describe a single piece of evidence (such as a portfolio).

There are opportunities to integrate assessment *between* Units (external integration). For example, the series of Units relating to Design, Assets, Development and Programming (see award structure) could be assessed more holistically by linking the outcomes into a larger, more coherent assessment activity. It is beyond the scope of this document to provide further details on external integration but this may be illustrated in future assessment support packs.

A portfolio-based approach to assessment is recommended within many of the units, and this approach can be extended to the whole award. This would involve candidates creating a portfolio at the outset of their studies and adding appropriate examples of their work as they progress through the programme. Such as approach facilitates the integration of assessment by specifying the amount and type of evidence required to be included in a candidate's portfolio by the end of the programme.

It may be appropriate to use an e-portfolio and e-assessment to assess the components of the Units within both of these awards. E-portfolios could be set up using a centre's VLE (if appropriate) or in a digital repository and could consist of Wikis, web logs and a game website.

6.4 Summary

The two awards attempt to give as much flexibility to centres as possible in delivering the courses. This flexibility is crucial since it is envisaged that, although primarily intended for full-time candidates, both colleges and schools could deliver these awards part time, full time, solely, or in conjunction. Within the frameworks there are opportunities to:

- Deliver a number of mandatory and optional Units to combined classes of both Creative and Software Development candidates
- Deliver these awards in either schools or colleges or both in conjunction
- Deliver a number of SCQF level 5 and SCQF level 6 classes providing greater flexibility for both schools and colleges
- Deliver Highers in Computing, Mathematics or Art and Design alongside individual Units in both frameworks

- ♦ Deliver Units which optimise Core and soft skills development (eg enterprise) such as:
  - — H1NC 12 *Mathematics for Computer Games (Numeracy)*
  - — H2WW 12 *Computer Games: Creative Project* (Communication/Working with Others)
  - — *H2WY 12 Working in the Computer Games Industry* (Enterprise/Literacy)
  - — H2X1 12 *Computer Gameplay*/H2CD 12 *Computer Games: Programming*/H1ND 12 *Artificial Intelligence for Games* (Problem Solving)
- ♦ Deliver two distinct courses alongside one another or individually that match to skillsets currently sought by employers

Both awards take a coherent approach to the skills needed for candidates wanting to progress into the industry. Although the awards can be delivered in a number of different ways their aim is to provide a cohesive view of the games industry and build the skills needed to progress into it.

The Units put great emphasis on practical work. Candidates research, design, create, test and promote a computer game. In the Computer Games: Software Development award they develop technological skills, using programming, mathematics and artificial intelligence to create better computer games. In the Computer Games: Creative Development award they create characters, 2D and 3D animations to create better computer games.

Both awards have a team project in which they can consolidate their technical skills in a simulated work environment to produce a finished product.

General information for Candidates

These awards are suitable if you want to learn more about how to create computer games. There are two linked awards: one that concentrates on programming and one that concentrates on design.

These qualifications are suitable if you want to pursue a career in the computer games industry or simply develop a range of skills that can be applied to a wide number of possible career paths. They are also suitable for progression to further studies, such as HNC or degree courses. While it is unlikely that possession of these qualifications on their own would lead directly to employment, the eventual career options available to you would include: computer programmer, game designer, software tester, and animator.

The National Certificates (NCs) in Computer Games Development at SCQF level 6 give you the opportunity to focus on one of two recognized, distinct strands in the current computer games industry (Creative or Software Development). Each of the frameworks includes a National Progression Award in Computer Games Development also at SCQF level 6, as well as specific topics relating to each area, and incorporating a

group project where you will work with others to create computer games in a real-life studio environment.

Each of the frameworks is made up of a set of mandatory Units that you must achieve and a range of optional Units so that the course can be tailored to suit your own needs. The options have been chosen carefully so that on gaining either of the awards you can be confident you have a solid foundation to progress further in your chosen area.

The awards will help you gain an understanding of the different job roles and their functions in the computer games industry, and the practical skills and principles used in designing, animating/programming and testing computer games.

The awards are assessed through a mix of theory and practical assessments. You will create and maintain a portfolio of your work throughout the programme, which will include the best examples of your work. The emphasis of both awards is the acquisition of practical skills, and an important part of each qualification is a practical project that you will undertake at the end of the programme.

Once you complete the award you will be eligible to apply for a number of more advanced qualifications, such as the HNC in Computer Games Development or one of a number of degree programmes in this area.

7   Supporting evidence

Appendix 1   Articulation to FE and HE courses
Appendix 2   Core Skills Mapping
Appendix 3   NOS Mapping

Appendix 1   Articulation to FE/HE Courses

Possible progression routes from NC in Computer Games: Software Development at SCQF level 6

Further Education

HNC/HND	Entry level	College Specific
HNC/HND Computer Games	7	No
HNC/HND Software Development	7	No
HNC/HND Interactive Media	7	No
HNC/HND Information Technology	7	No

Possible progression routes from relevant HNC/D programmes

Higher Education

University	Course Title
Caledonian University	BA Honours Computer Games (Software Development)
Caledonian University	BA Honours Computer Games (Design)
University of West of Scotland	BA Honours Computer Game Development
University of West of Scotland	BA Honours Computer Game Technology
Abertay University	BA Honours Computer Games Technology
Abertay University	BA Honours Computer Game Application Development
Napier University	BA Honours Computer Game Development

Possible progression routes from NC in Computer Games: Creative Development at SQCF level 6

Further Education

HNC/HND	Entry level	College Specific
HNC/HND Filmcraft and Animation	7	Motherwell
HNC/HND Animation	7	Dundee
HNC/HND Animation	7	Glasgow
HNC/HND Computer Arts and Design	7	No

Possible progression routes from related HNC/D programmes

Higher Education

University	Course Title
Caledonian University	BA Honours Computer Games (Art and Animation)
Caledonian University	BA Honours Computer Games (Design)
Abertay University	BA Honours Computer Arts
University of West of Scotland	BA Honours Computer Animation

Appendix 2   Core Skills Mapping

S = Signposted E = Embedded

Unit title	Unit Code	Oral	Written	Using Graphical Information	Using Numbers	Accessing Information	Providing/Creating information	Critical Thinking	Planning and Organising	Reviewing and Evaluating	Working with Others
		Communication		Numeracy		Information and CommunicationTechnology		Problem Solving			Working With Others
Computer Games: Software Development Project	H2WX 12	S	S				S	S	S	S	S
Computer Games: Design	HX9V 46		S				E(6)	E(6)	S	S	S
Computer Games: Media Assets	HX9W 46						E(6)	E(6)	S	S	S
Computer Games: Development	HX9X 46	S	S				E(6)	E(6)	S	S	S
Computer Games: Programming	H2CD 12	S	S	S	S		S	E @ L5	S	S	
Mathematics: Maths 1, 2 and 3	C100 12			E	E			E			
Computer Games: Creative Development Project	H2WW 12	S	S					S	S	S	S
Working in the Computer Games Industry	H2WY 12	S	S				S	S	S	S	
Computer Games: User Centred Design	H1KR 12	S	S				S	S	S	S	
Computer Gameplay	H2X1 12	S	S							S	
Computer Games: Character Creation	H2X0 12	S	S				S		S		

Unit title	Unit Code	Communication		Numeracy		Information Technology	Problem Solving			Working With Others
		Oral	Written	Using Graphical Information	Using Numbers	Using Information Technology	Critical Thinking	Planning and Organising	Reviewing and Evaluating	Working with Others
Artificial Intelligence for Computer Games	H1ND 12	S	S			S	E	S	S	
Mathematics for Computer Games	H1NC 12			E	E		E @ L5	E @ L4		
Computer Games: 2D Animation Skills	H2CE 12				S	S		S		
Computer Games: 3D Modelling and Animation Skills	H2CF 12				S	S		S		
Computing	C206 12					E @ L5	S	S	S	
Art and Design: Animation	F5C6 12	S@L5	S@L5			S@L5		S		
Art and Design: 3D Skills	F5CC 12	S@L5	S@L5				S@L5	S@L5	S@L5	
Art and Design: Digital Media	F5CH 12	S@L5	S@L5			S@L5		S@L5		
Media Production	DF16 12						E	E	E	E
Digital Media: Still Images	F3T5 12					S	S		S	S
Digital Acquisition and Editing: Video	F3T6 12	S	S						S	S
Digital Acquisition and Editing: Audio	F3T7 12					S			S	S
Art and Design	C223 12						S	S	S	
Art and Design: Line and Tone Techniques	F5CB 12	S	S				S			
Developmental Drawing	DV96 34			S	S		S	S	S	

Unit title	Unit Code	Communication		Numeracy		Information Technology	Problem Solving			Working With Others
		Oral	Written	Using Graphical Information	Using Numbers	Using Information Technology	Critical Thinking	Planning and Organising	Reviewing and Evaluating	Working with Others
Mobile Game Development	FN8X 11	S	S							S
Enterprise Activity	D36N 11						E	E	E	E
Creative Thinking and Goal Setting	DV91 11						E	E	E	
Gameplay	HY2F 45	S	S			E(4)	E(4)	E(4)	S	
Artificial Intelligence for Games	FN8V 11	S	S			S	S	S	S	S
Mathematics for Interactive Computing	FN84 11			E@L4	E	S	S	S	S	
Narrative Design and Development	FN8T 11	S	S			S	E			
Character Creation	FN8Y 11	S	S			S				
Games Programming	FN8R 11	S	S		S	S	E	S	S	
Games Interface Design	FN90 11					S		S	S	

Appendix 3   National Occupational Standards Mapping

Unit title	Unit Code	IM2	IM3	IM5	IM6	IM7	IM8	IM12	IM13	IM15	IM16	IM20	IM21	IM22	IM23	IM24	IM27	IM28
Computer Games: Software Development Project	H2WX 12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Computer Games: Design	HX9V 46			X							X	X			X			
Computer Games: Media Assets	HX9W 46	X	X				X		X							X	X	X
Computer Games: Development	HX9X 46	X			X	X		X	X		X		X	X				
Computer Games: Programming	H2CD 12			X		X	X	X	X			X	X	X				
Mathematics for Computer Games	H1NC 12					X							X	X				
Computer Games: Creative Project	H2WW 12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Working in the Computer Games Industry	H2WY 12																	
Computer Games: User Centred Design	H1KR 12			X								X						
Computer Gameplay	H2X1 12			X								X			X			
Computer Games: Character Creation	H2X0 12			X												X		
Artificial Intelligence for Games	H1ND 12					X						X	X	X				
Computer Games: 2D Animation Skills	H2CE 12			X								X			X	X		

Computer Games: 3D Modelling and Animation Skills	H2CF 12			X									X			X	X		

List of NOS Titles and Codes

Interactive Media and Computer Games

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
IM23 Create Narrative Scripts for Interactive Media Products
IM24 Create 2D Animations for Interactive Media Products
IM27 Create Sound Effects for Interactive Media Products
IM28 Create Music for Interactive Media Products