



# **Group Award Specification for:**

## **National Progression Award in Professional Computer Fundamentals at SCQF level 6**

**Group Award Code: GG0F 46**

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## **Acknowledgement**

SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of Higher National qualifications.

## 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
02	Clarification for credit transfer between the Units and MTA	12/03/2015

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# 1 Introduction

This is the Group Award Specification for the National Progression Award (NPA) in Professional Computer Fundamentals at SCQF level 6 which was validated in October 2012 and developed under the Design Principles for National Progression Awards.

This document includes: background information on the development of the Group Award, its aims, guidance on access, details of the Group Award structure, and guidance on delivery.

The NPA enhances the curricular provision of Professional Computer Fundamentals within the disciplines of Computing and IT. The assessment methods embedded in the award is designed to challenge the abilities of learners and allow achievement to be recognised and measured. The design of the qualification enables course programmes to be delivered in such a manner that on completion of an individual Unit, or all required Units, the NPA can be accredited.

Microsoft has recently introduced a qualification entitled 'Microsoft Technology Associate' (MTA) to which the NPA is mapped. The MTA certification helps centres teach and validate fundamental technology knowledge, provides candidates with a foundation for their careers and helps them gain the confidence they need to succeed in advanced studies, such as HN qualifications and Microsoft IT Professional exams.

The Microsoft Technology Associate qualification covers three main areas: IT Pro, Developer and Database. The pathways document can be accessed through the following link:

**[http://download.microsoft.com/download/2/7/1/2717166A-E6A1-4B31-8F61-5A0DC73B2F05/MTA\\_CertificationPathway.pdf](http://download.microsoft.com/download/2/7/1/2717166A-E6A1-4B31-8F61-5A0DC73B2F05/MTA_CertificationPathway.pdf)**

The IT Pro pathway leads on to Microsoft Professional level qualifications that are already embedded in the HN framework and this validation concentrates on the three sections under the IT Pro section, namely:

- ◆ Networking Fundamentals
- ◆ Security Fundamentals
- ◆ Server Administration Fundamentals

## 2 Rationale for the development of the award

It was felt by a number of Scottish Colleges that a gap existed in the National Certificate frameworks regarding vendor provision. Some SQA PC Passport qualifications had been mapped to IC3 and Microsoft Office vendor qualifications, however no mappings had been done to any of the more professional qualifications.

This NPA is designed as an entry-level certification to help individuals take the first step toward a career as an IT professional or developer. It is based on 70 per cent knowledge and 30 per cent skills split.

In order to carry the development forward, a Qualification Design Team (QDT) was formed and the award structure emerged. The framework was developed to match the demands of the Microsoft Technology Associate IT Pro qualification. QDT members from seven Colleges, namely Anniesland, Stow, Cardonald, Clydebank, Cumbernauld, James Watt and Kilmarnock were involved in the development of this Group Award. Primary research was carried out using a questionnaire linked to content and this was sent to delivering centres in Scotland, universities, representatives from SQA and industry representatives.

As well as being aligned to the IT Professional section of the Microsoft Technology Associate (MTA) qualification, The NPA was also mapped to the National Occupation Standards (NOS) for IT Users V3. Matching the awards with NOS will help meet the need of employers who wish learners to attain qualifications that meet current industry demands. All Units within the proposed awards have been mapped to the NOS, see Appendix 1 for the mapping of the award.

During the development process further market research was conducted to support the development using the following approaches:

- ◆ Desk based research
- ◆ Consultations with Further Education and Training Providers
- ◆ Consultations with local and national Employers

Brief details of the ways in which these three types of market research were conducted are shown below in Table 1 and further analysis identified and discussed in Appendix 3 Stakeholder Consultation.

**Table 1: Types of Market Research used to support development proposal**

Type of Research	Nature of Research
Desk based research	<p>Analysis of available data on course provision within the sector.</p> <p>Analysis of the information available from Microsoft regarding the Microsoft Technology Associate award that this qualification maps to.</p> <p>Review of college self-evaluation reports and SFC data and alternative funding models/sources.</p>
Consultations with Further Education and Training Providers	<p>Discussions within various forums with other centres and training providers.</p> <p>Initial consultation with FE colleges through engagement phase of the NQGA development project.</p> <p>An invitation to complete a 'Survey Monkey' questionnaire online was sent to all Scottish Colleges that offered computing based subjects.</p> <p>Further discussions within the QDT, led by developing partner colleges.</p>
Consultation with Employers	<p>An invitation to complete a 'Survey Monkey' questionnaire was sent to local and national employers.</p>

The analysis, feedback and comments arising from the various market research methodologies carried out for the development of the new Group Awards was used by the QDT to inform this development.

Further analysis and market research has identified that the awards will provide existing and new markets with opportunities to:

- ◆ Widen participation
- ◆ Provide a range of transferable skills
- ◆ Provide for 16–24 age group recruitment targets
- ◆ Offer retraining opportunities for adult returners
- ◆ Engage employers
- ◆ Develop and integrate the awards into different disciplines

As a result of the research and consultation conducted on behalf of the QDT, the findings provide an encouraging endorsement of the proposed title, structure and need for such a Group Award. Refer to the findings of the research and consultation in Appendix 3.

### **3 Aims of the Group Award**

#### **3.1 Principal aims of the Group Award**

The principal aims of the NPA are to:

- 1 Prepare candidates for employment in an IT/computing-related post at technician or professional level by developing their knowledge and skills in key areas such as:
  - ◆ Computer networks
  - ◆ Network hardware
  - ◆ Network services and protocols
  - ◆ Security Layers
  - ◆ Operating System Security
  - ◆ Network Security
  - ◆ Security Software
  - ◆ Server installations
  - ◆ Server role and storage solutions
  - ◆ Server performance and maintenance
- 2 Develop a range of contemporary vocational skills relating to User and computer management.
- 3 Prepare for progression to further qualifications at a higher level.

#### **3.2 General aims of the Group Award**

General aims of the NPA are to:

- 1 Ensure candidates acquire and develop appropriate knowledge, understanding and skills.
- 2 Provide an award which is sufficiently flexible to allow for a number of different modes of delivery.
- 3 Prepare candidates for the world of work in different vocational areas.
- 4 Provide candidates with a nationally recognised, relevant and up-to-date qualification.
- 5 Provide industry and commerce with individuals who have up-to-date skills in at an entry level.
- 6 Provide access to HN level programmes.



### 3.3 Target groups

The NPA is targeted at:

- ◆ Full-time NC Students on Computing Frameworks, the Units from the NPA will be added on to appropriate NC Computing frameworks. This will serve as lead on to Microsoft Certified Professional Qualifications in that are available at HN level.
- ◆ Part-time Programmes
- ◆ Evening Class Programmes
- ◆ Commercial Clients

### 3.4 Employment opportunities

The Microsoft Technology Associate qualification is a required part of the Microsoft Apprenticeship Programme and also provide qualifications to help gain entry Level Jobs in:

- ◆ Network Administration
- ◆ Server Administration
- ◆ Security Administration
- ◆ Identity and Access
- ◆ Management
- ◆ Desktop Deployment
- ◆ Desktop Support

## 4 Access to the Group Award

While entry is at the discretion of the centre, it would be advantageous if candidates have an interest and an understanding of Professional IT requirements. It would also be advantageous if candidates have gained the following:

Qualifications at SCQF level 5 or appropriate qualifications and experience.

The following are simply recommendations and should not be seen as a definitive or prescriptive list of entry requirements. The purpose is simply to give guidance on the selection of suitable candidates.

### Core Skills Entry Profile

The recommended minimum Core Skills entry profile for the NPA Professional Computer Fundamentals at SCQF level 6:

<i>Communication</i>	SCQF level 5
<i>Numeracy</i>	SCQF level 5
<i>Information and Communication Technology (ICT)</i>	SCQF level 5
<i>Problem Solving</i>	SCQF level 5
<i>Working with Others</i>	SCQF level 5

## Alternative Arrangements

The presenting centre may operate alternative access arrangements in cases where the candidate has the required competences in a given area. These arrangements are as follows:

- ◆ Assessment on demand
- ◆ Credit transfer
- ◆ Accreditation of prior learning

## 5 Group Award structure

The content of the Group Award: NPA Professional Computer Fundamentals at SCQF level 6 consists of three mandatory Units.

18 SCQF points, and 3 SQA credits are required to achieve the Group Award.

### 5.1 Structure

NPA Professional Computer Fundamentals — SCQF level 6

Unit title	Code	SCQF credit points	SCQF level	SQA credit value
<b>Mandatory – 3 credits required</b>				
Network Fundamentals	H2N5 12	6	6	1
Security Fundamentals	H2N6 12	6	6	1
Server Administration Fundamentals	H2N7 12	6	6	1

### Mandatory Units

The following is a summary of the Unit content for the mandatory Units of this Group Award:

#### Network Fundamentals

The overall aim of this Unit is to introduce the candidate to the theory of modern computer networks. The Unit introduces the candidate to the basic concepts of computer networking such as the different types of networks, network devices and network media. The Unit also covers the theory which underpins the way data is transferred over a computer network and the use of the network protocols and network utilities in that data transfer.

#### Security Fundamentals

The overall aim of this Unit is to introduce the candidate to fundamental approaches to security in modern computing environments. The Unit looks at layers of security and how to secure operating systems. The Unit also looks at methods of applying security in computer networks and using software to secure systems.

## Server Administration Fundamentals

The overall aim of this Unit is to introduce the candidate to fundamental approaches to server administration in modern computing environments. The Unit covers the role of the server and how it supports the user and computer management, also server installations, storage solutions and the performance and maintenance.

### 5.2 Core Skills

Opportunities to develop aspects of Core Skills, within the Group Award are identified in Appendix 2.

It is recommended that a candidate's Core Skill levels should be at SCQF level 5 to enable the candidate to progress onto SCQF level 6 on completion of the programme, as shown in the table below:

Core Skills	Minimum required Entry Level	Exit Level
Communication	5	6
Numeracy	5	6
Information and Communication Technology (ICT)	5	6
Problem Solving	5	6
Working with Others	5	6

Progress in development will be dependent on the delivery centre resources and the approaches to learning and teaching. For example, in Network Fundamentals, the practical activities of building, configuring and testing networks would develop Working with Others. This would also include some reflection in the approaches to learning and teaching.

### 5.3 Conditions of award

Candidates will be awarded the NPA on successful completion of which will include successful achievement of all three Units in the mandatory section (3 SQA credits, 18 SCQF credit points) at SCQF level 6.

## 6 Content and context

The content and context of the National Progression Award at SCQF level 6 the delivery of the Units split between theory and practical allowing the candidates to build their skills over the timeframe of delivery. The underpinning knowledge within the Units should be completely contextualised in order that the candidates can then incorporate the learning into their practical application. This approach will provide candidates with a more meaningful learning experience and will promote an increased coherence in the resulting quality and progressive development of practical and theory work.

The knowledge and skills from each component Unit can be assessed separately as discrete Units but also lend themselves to holistic assessment. The subject areas do not follow on from one another, but rather complement each other.

*The award is designed to give the candidates a breadth and depth of knowledge and skills to prepare them for entry into further education or the workplace.*

## 6.1 Approaches to delivery and assessment

The approaches to delivery and assessment due to the contents of the Units will be split between theory and practical. The assessments will measure the skills of the candidates as well as their knowledge and understanding.

There is an opportunity to adopt a blended learning approach that will integrate knowledge based learning with development of practical skills through application.

The Group Award has been developed to facilitate flexible delivery and assessment, which is intended to be of a practical nature wherever possible, reflecting the practical nature of the subject. Delivery models will be dependent on the centre and the client group. For example, they could be offered to part-time candidates working full-time in industry and attending college in the evening.

## 6.2 Sequence of delivery

The order of delivery of the Units is at the discretion of the centre. However, a recommended approach would be to start with Network Fundamentals, moving on to Security Fundamentals and finally Server Administration Fundamentals. This matches the order as recommended by Microsoft.

Each Unit currently maps to a Microsoft Technology Associate exam. Details of the Microsoft Technology Associate exams can be found at the following address: <http://www.microsoft.com/learning/en/us/certification/mta.aspx>

At present the Units map to the following exams:

<b>SQA Unit</b>	<b>Relevant Microsoft Exam</b>
Network Fundamentals	Exam 98-366
Security Fundamentals	Exam 98-367
Server Administration Fundamentals	Exam 98-365

Candidates who have successfully achieved the relevant Microsoft Exams will achieve full credit to the associated SQA Units. This is not done automatically and candidates will have to be entered and passed for the SQA Units by the delivering centre. In order for credit transfer to be valid, please ensure that a copy of the achieved Microsoft exam certificate is retained as proof of achievement for verification purposes. Please note, credit transfer is one-way (vendor to SQA unit) and completion of the SQA unit will only provide the underpinning knowledge to prepare candidates for the associated Microsoft Exam, they would not achieve the exam automatically on completion of the SQA unit.

It is hoped that centres deliver these Units and put their candidates through the relevant Microsoft exam, to give them a worldwide recognised professional vendor qualification. These Microsoft exams can be delivered by a centre via the Certiport testing system ([www.certiport.com](http://www.certiport.com))

Centres not already delivering exams via Certiport would have to become an approved Certiport testing centre prior to being able to offer these exams.

There are a range of official books to cover the three subject areas available from Wiley, these include instructor resources such as Powerpoint slides and practice exam questions.

Delivery of the Units within each of the Group Award do not necessarily need be done in isolation, nor be delivered via the Microsoft route. Each Unit relates with the knowledge, skills and experiences developed in each of the others.

Centres are free to decide on delivery mechanism and to this end would benefit from having a Course Leader identified prior to delivery, to ensure that those involved delivering different areas communicate with each other about delivery and timings. This approach will enable a coherent and best value experience for the candidates who will be able to understand the links between the Units, which should be reinforced by all staff involved in the delivery.

There are opportunities for integrated learning and assessment across the Units and wherever possible a holistic approach should be taken to the delivery and assessment of the Group Award. Further details can be found within the individual Unit specifications.

A candidate-centred, practical and interactive approach to delivery and learning should be adopted throughout. The range of methods used in delivering the awards should ensure that experiential learning opportunities are available to candidates.

The flexibility of the Group Award means that centres can integrate them with National Certificate programmes in their full time courses, or deliver the Group Award in isolation eg evening class programmes and other part-time programmes. The nature of the subject area will lend itself to flexible delivery, e-learning and e-assessment for aspects of the Group Award, eg candidates to submit formative or summative assessments via electronic means such as Computer systems or mobile technology devices.

The NPA would also be suitable for evening class, part time and distance learners.

### **6.3 Delivery of Core Skills**

The Core Skills identified in the mapping tables in Appendix 2 show the signposting of the components within many of the Units for each of the awards. This is in relation to the detail in the Unit specifications.

Centres may at their discretion include stand-alone Core Skill Units into the curriculum to support the candidate's development.

Opportunities to contextualise Core Skills are available within certain Units as noted below:

#### **Communication**

There are opportunities to develop aspects of oral and written Core Skill of *Communication* through participation in group discussion, presentations, within all three Units.

#### **Numeracy**

There are limited opportunities in the Network Fundamentals Unit, in relation to Using Numbers for various activities.

#### **ICT**

The nature of all three Units provides development opportunities for all Core Skills elements of *ICT*, however not in the content and context that would meet certification for this Core Skill Unit.

## **Problem Solving**

Candidates will have the opportunity to develop aspects of the Core Skill of *Problem Solving* within all three Units through associated tasks in the analysis and applications of practical and research activities.

## **Working with Others**

There are limited opportunities in the Network Fundamentals Unit, in relation to this specific Core Skill.

## **6.4 Open Learning**

Although not specifically designed as an online course or open learning programme, there is scope for e-learning and e-assessment of theoretical and practical aspects of the awards. Where e-assessment is used, centres must consider how they will ensure the authentication of candidate evidence. This can be achieved through a variety of methods such as discussion, video or an approved employer or other responsible person who can verify the candidate work.

Where possible, candidates should be able to use their mobile devices and be exposed to other devices which can be supplied by the centre. They should be encouraged to use online manuals and other support mechanisms such as helpdesks. These resources can be used to support candidates in an open learning environment and will encourage independent learning.

## **7 General information for centres**

### **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](http://www.sqa.org.uk/assessmentarrangements).

### **Internal and external verification**

All instruments of assessment used within this/these Group Award(s) should be internally verified, using the appropriate policy within the centre and the guidelines set by SQA.

External verification will be carried out by SQA to ensure that internal assessment is within the national guidelines for these qualifications.

Further information on internal and external verification can be found in *SQA's Guide to Assessment* ([www.sqa.org.uk](http://www.sqa.org.uk)).



## 8 General information for candidates

The National Progression Award (NPA) in Professional Computer Fundamentals at SCQF level 6, is designed to enable you to acquire and develop knowledge, understanding and skills for networking, securing and administering computer systems.

Technology plays a role in virtually every business around the world. Possessing the fundamental knowledge of how technology works and understanding its impact on today's academic and workplace environment is increasingly important, particularly if you are interested in exploring professions involving computing and information technology.

Three mandatory Units are required to gain the NPA. The mandatory Units are designed to give you fundamental knowledge and skills in:

- ◆ Computer networks, including Network hardware and Network services and protocols.
- ◆ Security, including Security Layers, Operating System Security, Network Security and Security Software.
- ◆ Server concepts including server installation, Server roles, User and computer management.
- ◆ Server storage solutions, Server performance and maintenance.

This National Progression Award will also prepare you for progression to further qualifications at a higher level.

In addition to the above skills, the mandatory Units within this award will also equip you with skills such as:

- ◆ employability skills
- ◆ listening skills
- ◆ problem solving
- ◆ team working
- ◆ adaptability
- ◆ flexibility
- ◆ planning

The Units at SCQF level 6 are split between theory and practical and a range of assessment approaches will include:

- ◆ candidate logbooks
- ◆ evidence of practical work
- ◆ reports
- ◆ short response questions
- ◆ project

For entry into the NPA Professional Computer Fundamentals at SCQF level 6, it would be an advantage to have some experience of Computing and Information Technology at level 5 or have completed a lower level qualification.

## 8.1 Progression pathways

The NPA Professional Computer Fundamentals at SCQF level 6 will provide progression to PDAs such as Desktop Computer Troubleshooting. Centres can offer appropriate additional Units at level 6 to allow progression to HN awards. The Group Award can lead to further study across a range of vocational areas and include:

- ◆ Computing
- ◆ Information Technology
- ◆ Multimedia

## 9 Glossary of terms

**SCQF:** This stands for the Scottish Credit and Qualification Framework, which is a new way of speaking about qualifications and how they inter-relate. We use SCQF terminology throughout this guide to refer to credits and levels. For further information on the SCQF visit the SCQF website at [www.scqf.org.uk](http://www.scqf.org.uk)

**SCQF credit points:** One SCQF credit point equates to 10 hours of learning. NQ Units at SCQF levels 2–6 are worth 6 SCQF credit points, NQ Units at level 7 are worth 8 SCQF points.

**SCQF levels:** The SCQF covers 12 levels of learning. National Qualification Group Awards are available at SCQF levels 2–6 and will normally be made up of National Units which are available from SCQF levels 2–7.

**Dedicated Unit to cover Core Skills:** This is a non-subject Unit that is written to cover one or more particular Core Skills.

**Embedded Core Skills:** This is where the development of a Core Skill is incorporated into the Unit and where the Unit assessment also covers the requirements of Core Skill assessment at a particular level.

**Signposted Core Skills:** This refers to the opportunities to develop a particular Core Skill at a specified level that lie outwith automatic certification.

**Qualification Design Team:** The QDT works in conjunction with a Qualification Manager/Development Manager to steer the development of the National Certificate/National Progression Award from its inception/revision through to validation. The group is made up of key stakeholders representing the interests of centres, employers, universities and other relevant organisations.

**Consortium-devised National Certificates/National Progression Awards** are those developments or revisions undertaken by a group of centres in partnership with SQA.

## 10 Appendices

Appendix 1: National Occupational Standards Mapping

Appendix 2: Core Skills Mapping

## **Appendix 1: Mapping of National Occupational Standards to Units**

### **National Occupational Standards for IT Users V3**

#### **Areas of competence**

##### **Core**

IPU: Improving productivity using IT

##### **Using IT Systems**

IUF: FS IT user fundamentals

SIS: Set up an IT system

OSP: Optimise IT system performance

ITS: IT security for users

##### **Using IT to Find and Exchange Information**

ICF: FS IT communication fundamentals

INT: Using the Internet

UMD: Using mobile IT devices

EML: Using e-mail

PIM: Personal information management software

UCT: Using collaborative technologies

##### **Using Productivity Tools and Applications**

ISF: FS IT software fundamentals

AV: Audio and Video Software

BS: Bespoke or specialist software

CAS: Computerised accounting software

DB: Database software

DMS: Data management software

DIS: Design and imaging software

DPS: 2D Drawing and planning software

DTP: Desktop Publishing Software

MM: Multimedia software

PS: Presentation software

PM: Project management software

SS: Spreadsheet software

WS: Website software

WP: Word processing software

## Appendix 2: Mapping of National Occupational Standards to Units

### National Occupational Standards for IT Users V3

### NPA Professional Computing Fundamentals (level 6)

Unit code	Unit title	NOS Titles — Areas of Competence																									
		Core	Using IT Systems				Using IT to Find and Exchange Information					Using Productivity Tool and Applications															
		IPU	IUF:FS	SIS	OSP	ITS	ICF:FS	INT	UMD	EML	PIM	UCT	ISF:FS	AV	BS	CAS	DB	DMS	DIS	DPS	DTP	MM	PS	PM	SS	WS	WP
<b>Mandatory Units</b>																											
New	Networking Fundamentals	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓														✓	✓
New	Security Fundamentals	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓														✓	✓
New	Server Administration Fundamentals	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓														✓	✓

## Core Skills Mapping of the Group Award

### NPA Mobile Technology (Level 6)

Unit code	Unit	Communication		Information and Communication Technology	Numeracy		Problem Solving			Working with Others
		Oral	Written	ICT	Using Graphical Information	Using Number	Critical Thinking	Planning and Organising	Reviewing and Evaluating	Working with Others
		<i>S = signposted</i>								
New	Network Fundamentals	S	S	S		S	S	S	S	S
New	Security Fundamentals	S	S	S			S	S	S	
New	Server Administration Fundamentals	S	S	S			S	S	S	