Contents

1   Introduction

This document was previously known as the arrangements document. The purpose of this document is to:

♦ Assist centres to implement, deliver and manage the qualification
♦ Provide a guide for new staff involved in offering the qualification
♦ Inform course managers teaching staff, assessors, learners, employers and higher education institutes (HEIs) of the aims and purpose of the qualification
♦ Provide details of the range of learners the qualification is suitable for and progression opportunities

The National Progression Award (NPA) in Computer Networks is available at SCQF level 5. This award is a revision of the original NPA Computer Networks and Systems (G9J8 45), which was first introduced in 2009. Since its introduction, it has proven to be quite popular in centres, with a steady uptake over the years. Entries for this award are historically from the college sector.

The award is composed of units which form part of the National Certificate (NC) awards in Computing with Digital Media. Learners for the NC Computing with Digital Media awards have the opportunity to be certificated for this NPA depending on their choice of units within their programmes. Conversely, learners who achieve an NPA award will have SCQF credits that can count towards the NC Computing with Digital Media awards.

The qualification has not been reviewed since it was introduced in 2009. A scoping exercise was carried out in 2019 to obtain feedback from educators on how well the award meets its objectives, and to identify potential improvements. The scoping exercise identified the main areas for improvement. Qualitative research took place during the development to ensure that the changes were appropriate and supported by stakeholders. The qualitative research took place during the scoping exercise.

The main findings are summarised in the box below.

1	There was general satisfaction with the title and structure of the award and no demand for fundamental change to the framework or the component units.
2	No new units were required but the existing units require modernisation.
3	The range of topics within the units should be reviewed.

As a result, the following changes were made to the award.

1	The contents of all of the units were revised and updated.
2	The range of topics within the units was reviewed.

A small change was made to the award title by shortening it to Computer Networks. However, no changes were made to the qualification structure, conditions of award or unit titles.

Networking skills are important. Networking, in its many forms, is spreading throughout society, and people are needed to maintain these networks and support network users. This qualification provides foundation knowledge and skills in networking. and provides a springboard for further study in this area and eventual employment.

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2 Qualifications structure

This group award is made up of three SQA unit credits. It comprises 18 SCQF credit points at SCQF level 5. All units are mandatory; there are no optional units.

A mapping of Core Skills development opportunities is available in section 5.3.

2.1 Structure

The award comprises three mandatory units. To achieve the award, learners must achieve all of the component units at level 5. The table below defines the structure of the award.

SCQF level 5 (National 5)

4 code	2 code	Unit title	SQA credit	SCQF credit points	SCQF level
J519	45	Computing: Computer Networking Fundamentals	1	6	5
J51A	45	Computing: Install and Maintain Computer Hardware	1	6	5
J51B	45	Computing: Install and Maintain Computer Software	1	6	5

The qualification structure has not changed from the original award. However, each of the component units has been updated.

3 Aims of the qualifications

The aims of the qualification are categorised as 'general aims' or 'specific aims'. General aims relate to generic, subject independent objectives; specific aims relate to subject-related objectives. Some of the specific aims simply situate the general aims in the context of the subject area.

3.1 General aims of the qualifications

The general aims of the qualification are to:

1 Provide an up-to-date curriculum, reflecting contemporary knowledge and skills.
2 Develop skills in computing.
3 Develop problem solving skills.
4 Develop collaboration and team working skills.
5 Develop Core Skill in *Information and Communication Technology* (ICT) and enterprise, citizenship and digital skills.
6 Develop employability skills.
7 Stimulate interest in Science, Technology, Engineering and Mathematics (STEM) among learners.
8 Encourage learners to consider careers in computing-related field.
9 Provide a stimulating and enjoyable learning experience.

3.2 Specific aims of the qualifications

The following specific aims are additional to the general aims or contextualise the general aims in terms of computer networks.

10 Work safely with computer systems and hardware components.
11 Develop skills to install, configure and upgrade a range of systems and application software.
12 Develop vocational skills relevant to careers in networking.
13 Facilitate progression to further study in computing, networking or IT related fields.

4 Recommended entry to the qualifications

Entry to this qualification is at the discretion of the centre. The following information on prior knowledge, skills, experience or qualifications that provide suitable preparation for this qualification has been provided as guidance only.

Learners would benefit from having attained the skills, knowledge and understanding required by one or more of the following or equivalent qualifications and/or experience:

♦ Basic computing knowledge and skills (SCQF level 4 entry)
♦ Computing Science at National 4
♦ Any appropriate grouping of National Units
♦ Appropriate industrial experience

5 Additional benefits of the qualification in meeting employer needs

This qualification was designed to meet a specific purpose and what follows are details on how that purpose has been met through mapping of the units to the aims of the qualification. Through meeting the aims, additional value has been achieved by linking the unit standards with those defined in National Occupational Standards and/or trade/professional body requirements. In addition, opportunities exist for learners to develop a range of generic skills that should increase employability prospects.

5.1 Mapping of qualification aims to units

The core of the qualification is computer networking and that is reflected in the mapping of the aims to the units (see table below). The unit entitled *Computing: Computer Networking Fundamentals* contributes to every aim of the award; the other units contribute to specific aims.

Code	Unit title	Aims												
		1	2	3	4	5	6	7	8	9	10	11	12	13
J519 45	Computing: Computer Networking Fundamentals	X	X	X	X	X	X	X	X	X	X	X	X	X
J51A 45	Computing: Install and Maintain Computer Hardware	X	X			X	X	X	X	X	X			X
J51B 45	Computing: Install and Maintain Computer Software	X	X			X	X	X	X	X		X		X

5.2 Mapping of National Occupational Standards (NOS)

There are a number of National Occupational Standards (NOS) relating to IT users. These standards are maintained by Skills Development Scotland.

The following table shows how the component units in this award contribute to the standards.

Code	Unit title	National Occupational Standard						
		ESKITU040	ESKITU041	ESKITU050	ESKITU051	ESKITU052	ESKITU053	ESKITU061
J519 45	Computing: Computer Networking Fundamentals	X	X	X	X	X	X	X
J51A 45	Computing: Install and Maintain Computer Hardware	X		X	X	X	X	
J51B 45	Computing: Install and Maintain Computer Software	X	X	X	X			X

It is likely that learners will undertake activities that contribute to the following performance criteria within these standards.

ESKITU040   Use safe and secure practices when working with digital systems
ESKITU041   Set up security software for digital systems
ESKITU050   Use digital systems
ESKITU051   Configure digital systems
ESKITU052   Optimise performance of digital systems
ESKITU053   Manage the operation of digital systems
ESKITU061   Select and use a range of IT applications to develop quality solutions

5.3   Mapping of Core Skills development opportunities across the qualifications

The award does not embed any Core Skills. However, all of the component units will provide opportunities to develop Core Skills (indicated by 'S', for sign-posting, in the table below).

Unit code	Unit title	Communication			Numeracy		ICT		Problem Solving			Working with Others	
		Written (Reading)	Written (Writing)	Oral	Using Number	Using Graphical Information	Accessing Information	Providing/Creating Information	Critical Thinking	Planning and Organising	Reviewing and Evaluating	Working Co-operatively with Others	Reviewing Co-operative Contribution
J519 45	Computing: Computer Networking Fundamentals						E (5)	S (5)	E (5)	S(5)			
J51A 45	Computing: Install and Maintain Computer Hardware						E (5)	S (5)	E (5)	S(5)			
J51B 45	Computing: Install and Maintain Computer Software						E (5)	S (5)	E (5)	S (5)			

5.4   Assessment strategy for the qualifications

The qualification can be assessed in one of the following ways.

1   Unit by unit
2   Combined assessment

Both approaches are valid.

The first approach would involve assessing each unit separately. The evidence requirements in each unit defines the specific evidence that learners must produce. Separate assessments will be required to produce this evidence. If this approach is adopted, at least three assessment activities (one for each unit) would have to be produced. The second approach would involve combining the assessment of all of the units. A single assessment activity would generate all of the required evidence for the award.

The recommended assessment strategy is to assess using a combined assessment (the second approach). This approach is more natural and holistic than the alternative approach since each assessment would span the full development process (setting up and securing a small network through installing, configuring, maintaining and securing hardware components and software applications).

The assessments will normally carried out under controlled conditions, although learners may undertake some assessment activity outside of a formal learning environment so long as their work is authenticated. The assessment would take place once formal teaching and learning is complete. It is anticipated that the assessment would be undertaken over an extended period of time, during the second half of the allocated time. Access to reference material is permissible.

See the support materials section of this document for further information about assessment.

6   Guidance on approaches to delivery and assessment

The qualification is designed for learners, who wish to gain knowledge and skills in the field of computer networking. The award is most popular in colleges, but it could also be delivered in schools, where it would broaden the Computing curriculum. In both environments, the award will provide stimulating and engaging activities, which will develop a wide range of important skills in preparation for further studies or employment.

The qualification comprises three component units:

1   *Computing: Computer Networking Fundamentals*
2   *Computing: Install and Maintain Computer Hardware*
3   *Computing: Install and Maintain Computer Software*

This NPA aims to provide learners with the confidence to implement, maintain and troubleshoot everyday situations of computer networking. This will provide a useful range of vocational skills. The precise content of the units has been updated to reflect some recent changes in technology.

The NPA may be delivered either as a standalone qualification or as part of a larger group award, such as a National Certificate (NC).

Each unit is one credit, which requires **40 hours** to complete. The award will require **120 hours**. This can be timetabled across one term or across an entire session. There are opportunities to integrate items within the component units. More information on ways of doing this can be found in the unit specification of each unit.

6.1   Sequencing/integration of units

It is recommended that the component units are delivered in the following sequence.

The knowledge and skills gained as part of the *Computing: Install and Maintain Computer Hardware* unit can be used within the *Computing: Install and Maintain Computer Software* unit to enable learners to set up a small office/home network in the *Computing: Computer Networking Fundamentals* unit.

There is significant scope to integrate the knowledge and skills across all three units. The knowledge evidence could be combined into one assessment for all three units. The same approach could be adopted for the practical element of this course. This would involve combining the practical outcomes in all of the units into a single activity/task that would capture the process of setting up, installing, maintaining and securing hardware components and software applications as part of a small network. The recommended assessment strategy in each of the unit specifications adopts this approach.

6.2   Recognition of prior learning

SQA recognises that learners gain knowledge and skills acquired through formal, non-formal and informal learning contexts.

In some instances, a full group award may be achieved through the recognition of prior learning. However, it is unlikely that a learner would have the appropriate prior learning and experience to meet all the requirements of a full group award.

Where learners have previous experience of computer networking, this could be used to satisfy some or all of the evidence requirements. In such circumstances, authentication would be vital.

More information and guidance on the *Recognition of Prior Learning* (RPL) may be found on our website **www.sqa.org.uk**.

The following sub-sections outline how existing SQA unit(s) may contribute to this group award. Additionally, they also outline how this group award may be recognised for professional and articulation purposes.

6.2.1 Articulation and/or progression

The main means of progression is **internal progression** within the qualification framework. The suite of awards has been designed for easy progression from one level to the next.

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┌──────────────┐      ┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│ NPA Computer │      │ NC Computing │      │ NC Computing │      │   HNC/D      │
│   Networks   │  →   │ with Digital │  →   │ with Digial  │  →   │  Computing:  │
│              │      │    Media     │      │    Media     │      │  Networking  │
│   Level 5    │      │   Level 5    │      │   Level 6    │      │   Level 8    │
└──────────────┘      └──────────────┘      └──────────────┘      └──────────────┘
        ↓
┌──────────────┐      ┌──────────────┐
│ NC Computing:│      │ NC Computing:│
│  Technical   │  →   │  Technical   │
│   Support    │      │   Support    │
│   Level 5    │      │   Level 6    │
└──────────────┘      └──────────────┘
```
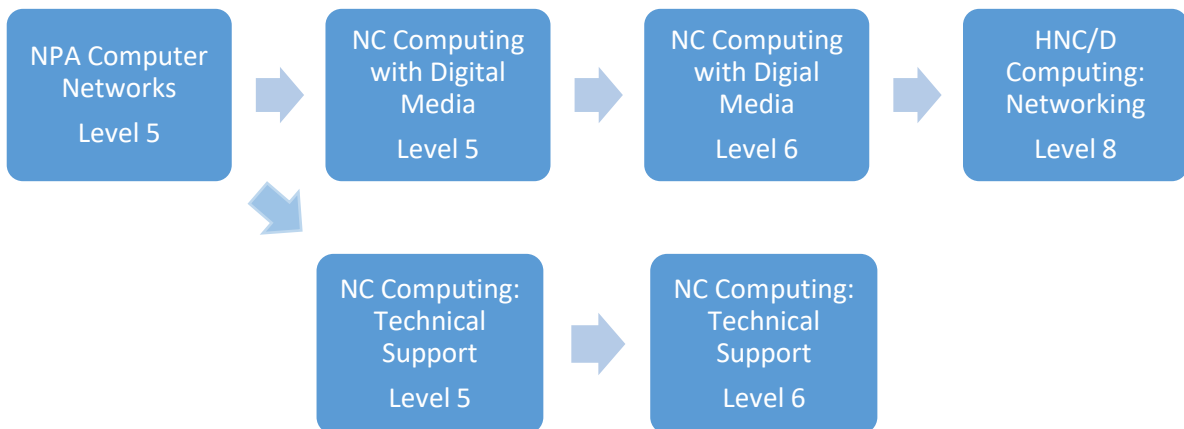
Learners who undertake this award could expect increased employment opportunities in the IT sector if they enter employment directly from school. Moreover, the qualification could lead into a Foundation Apprenticeship (FA) in IT. Learners would have the opportunity to access both strands, ie the FA in IT: Hardware/System Support and FA in IT: Software Development. Alternatively, learners could enter a Modern Apprenticeship in IT and Telecommunications at SCQF level 6.

Progression is possible to a number of qualifications, such as the National Certificate (NC) in Computing with Digital Media, at SCQF levels 5 and 6, or the National Certificate (NC) in Computing: Technical Support at SCQF levels 5 and 6. Learners who gain this would be considered for entry into HND Computing: Networking at college.

6.2.2 Professional recognition

There is no professional recognition for this award.

6.2.3 Transitional arrangements

The revised units will replace the existing units in August 2024. Until that time, the following transitional framework will be used for learners who possess units in the existing award.

National Progression Award (NPA) in Computer Networks at SCQF level 5 (transitional framework)

4 code	2 code	Unit title	SQA credit	SCQF credit points	SCQF level
J519 F1KH	45 11	Computing: Computer Networking Fundamentals or Computing: Computer Networking Fundamentals	1	6	5
J51A F1KF	45 11	Computing: Install and Maintain Computer Hardware or Computing: Install and Maintain Computer Hardware	1	6	5
J51B F1KP	45 11	Computing: Install and Maintain Computer Software or Computing: Install and Maintain Computer Software	1	6	5

This transitional framework is based on the credit transfer arrangements detailed in the following section.

6.2.4 Credit transfer

The following table defines the credit transfer arrangements between the 'old' and 'new' units.

Existing units		Revised units	
F1KH 11	Computing: Computer Networking Fundamentals	J519 45	Computing: Computer Networking Fundamentals
F1KF 11	Computing: Install and Maintain Computer Hardware	J51A 45	Computing: Install and Maintain Computer Hardware
F1KP 11	Computing: Install and Maintain Computer Software	J51B 45	Computing: Install and Maintain Computer Software

The credit transfer is full and two-way. Learners who possess either existing or revised units can use them (in combination) to contribute to the group award.

6.3   Opportunities for e-assessment

The award can be delivered in a variety of ways, ranging from traditional classroom delivery to online delivery. A wide range of digital resources exist to support teaching and learning, such as YouTube videos that explain various aspects of the course.

E-assessment can be used for formative and summative assessment. All assessments for this award will be digital and hosted on SOLAR.

6.4   Support materials

There is a digital assessment for each unit. Each assessment integrates the knowledge and skills contained within each unit of the award.

The evidence produced by the SOLAR assessment will take two forms:

1   Knowledge evidence
2   Practical evidence

The knowledge evidence is produced through a single test that will span the knowledge contained within the three component units. Successful completion of this test will satisfy the knowledge requirements for all three units.

The practical evidence is produced by undertaking the practical task described in the assessment. Successful completion of this activity will satisfy the practical requirements for all three units.

A list of existing assessments is available to view on SQA's website.

7   General information for centres

Equality and inclusion

The unit specifications making up this group award have been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners will be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence. Further advice can be found on our website **www.sqa.org.uk/assessmentarrangements**.

Internal and external verification

All instruments of assessment used within this/these qualification(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/GuideToAssessment)**.

8   Glossary of terms

Embedded Core Skills: is where the assessment evidence for the unit also includes full evidence for complete Core Skill or Core Skill components. A learner successfully completing the unit will be automatically certificated for the Core Skill. (This depends on the unit having been successfully audited and validated for Core Skills certification).

Finish date: The end of a group award's lapsing period is known as the finish date. After the finish date, the group award will no longer be live and the following applies:

♦   learners may not be entered for the group award
♦   the group award will continue to exist only as an archive record on the Awards Processing System (APS)

Lapsing date: When a group award is entered into its lapsing period, the following will apply:

♦   the group award will be deleted from the relevant catalogue
♦   the group award specification will remain until the qualification reaches its finish date at which point it will be removed from SQA's website and archived
♦   no new centres may be approved to offer the group award
♦   centres should only enter learners whom they expect to complete the group award during the defined lapsing period

SQA credit value: The credit value allocated to a unit gives an indication of the contribution the unit makes to an SQA group award. An SQA credit value of 1 given to an SQA unit represents approximately 40 hours of programmed learning, teaching and assessment.

SCQF: The Scottish Credit and Qualification Framework (SCQF) provides the national common framework for describing all relevant programmes of learning and qualifications in Scotland. SCQF terminology is used throughout this guide to refer to credits and levels. For further information on the SCQF visit the SCQF website at **www.scqf.org.uk**.

SCQF credit points: SCQF credit points provide a means of describing and comparing the amount of learning that is required to complete a qualification at a given level of the Framework. One National Unit credit is equivalent to 6 SCQF credit points. One National Unit credit at Advanced Higher and one Higher National Unit credit (irrespective of level) is equivalent to 8 SCQF credit points.

SCQF levels: The level a qualification is assigned within the framework is an indication of how hard it is to achieve. The SCQF covers 12 levels of learning. HNCs and HNDs are available at SCQF levels 7 and 8 respectively. Higher National Units will normally be at levels 6–9 and Graded Units will be at level 7 and 8. 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.

Subject unit: Subject units contain vocational/subject content and are designed to test a specific set of knowledge and skills.

Signposted Core Skills: Refers to opportunities to develop Core Skills arise in learning and teaching but are not automatically certificated.

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. Centres are advised to check SQA's APS Navigator to confirm they are using the up to date qualification structure.

NOTE: Where a unit is revised by another unit:

♦ No new centres may be approved to offer the unit which has been revised.
♦ Centres should only enter learners for the unit which has been revised where they are expected to complete the unit before its finish date.

Version number	Description	Date

Acknowledgement

SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of this qualification.

9   General information for learners

This section will help you decide whether this is the qualification for you by explaining what the qualification is about, what you should know or be able to do before you start, what you will need to do during the qualification and opportunities for further learning and employment.

The National Progression Award (NPA) in Computer Networks at SCQF level 5 will introduce you to the fundamental knowledge and skills required to make effective use of computer hardware, software and networks. The units that comprise this National Progression Award (NPA) are a subset of the units in the National Certificate (NC) in Computing with Digital Media suite of awards, as well as the NC in Computing: Technical Support, at SCQF level 5.

The three component units are:

♦   *Computing: Computer Networking Fundamentals*
♦   *Computing: Install and Maintain Computer Hardware*
♦   *Computing: Install and Maintain Computer Software*

During the award, you will gain a variety of knowledge and skills including being able to.

♦   identify the basic function of hardware components and their safe operation
♦   set up an operational computer system with a range of computer hardware
♦   maintain and upgrade an existing computer system
♦   identify types and features of software products and types of software legislation and licensing
♦   install and configure system software and application software
♦   update and troubleshoot installed software
♦   identify computer networking concepts and network components
♦   plan and assemble a computer network using existing and manufactured components
♦   configure and test a computer network

The award is mainly practical in nature and, although you will be assessed on some theory, the assessment will comprise of a practical task that will require you to set up and secure a small home/office network; install and maintain hardware components; and install and maintain software applications. You are required to do this by yourself, but you will learn in a collaborative way, along with other learners.

This qualification will provide opportunities for you to develop aspects of the Core Skills of *Information and Communication Technology (ICT)* and *Problem Solving.* Throughout the course, you will also gain invaluable digital skills that will be useful for future studies or employment.

On completion of the qualification you could enter into to a qualification at the same level, eg National Certificate (NC) in Computing with Digital Media at SCQF level 5 or National Certificate (NC) in Computing: Technical Support, or progress to higher level qualifications in this area, such as NC in Computing with Digital Media at SCQF level 6 or an HNC or HND course in computing.