



## National Unit specification

### General information

**Unit title:** Web Apps: Spreadsheets (SCQF level 6)

**Unit code:** HA6L 46

**Superclass:** CD

**Publication date:** May 2016

**Source:** Scottish Qualifications Authority

**Version:** 02

### Unit purpose

The purpose of this Unit is to enhance learners' knowledge, understanding and practical problem-solving skills in using spreadsheet applications, through a range of complex practical and knowledge based tasks. The Unit has a particular emphasis on using web applications, although this is not exclusive and desktop apps can be used as long as learners can collaborate on spreadsheets within a cloud based service.

Learners will gain knowledge and skills in creating **complex** spreadsheets and implementing practical solutions using a range of complex features and functions of spreadsheet applications.

They will also develop an understanding on the collaboration in the production of a complex spreadsheet within an online environment.

This Unit is appropriate for any learner who wishes to enhance their IT skills by covering complex features and functions of a spreadsheet application.

This Unit is a mandatory Unit within the National Progression Award in PC Passport at SCQF level 6, and is also available as a free-standing Unit. On successful completion of this Unit, learners may progress to National Certificates or Higher National Certificates in Computing or related qualifications.

## National Unit specification: General information (cont)

**Unit title:** Web Apps: Spreadsheets (SCQF level 6)

### Outcomes

On successful completion of the Unit the learner will be able to:

- 1 Describe the complex functions and features of a spreadsheet application.
- 2 Create a complex spreadsheet to a given brief.
- 3 Collaborate on the production of a complex spreadsheet.

### Credit points and level

1 National Unit credit at SCQF level 6: (6 SCQF credit points at SCQF level 6)

### Recommended entry to the Unit

Entry to this Unit is at the discretion of the centre. However, learners would normally be expected to have attained the skills, knowledge and understanding required by the following or equivalent qualification.

*Web Apps: Spreadsheets* (SCQF level 5)

In terms of prior learning and experience, relevant experiences and Outcomes may also provide an appropriate basis for doing this Unit.

### Core Skills

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

Complete Core Skill                      Problem Solving at SCQF level 6

Core Skill component                      Providing/Creating Information at SCQF level 6

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

### Context for delivery

If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

The Assessment Support Pack (ASP) for this Unit provides assessment and marking guidelines that exemplify the national standard for achievement. It is a valid, reliable and practicable assessment. Centres wishing to develop their own assessments should refer to the ASP to ensure a comparable standard. A list of existing ASPs is available to download from SQA's website (<http://www.sqa.org.uk/sqa/46233.2769.html>).

## **National Unit specification: General information (cont)**

**Unit title:** Web Apps: Spreadsheets (SCQF level 6)

### **Equality and inclusion**

This Unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should 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](http://www.sqa.org.uk/assessmentarrangements).

## **National Unit specification: Statement of standards**

### **Unit title: Web Apps: Spreadsheets (SCQF level 6)**

Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

#### **Outcome 1**

Describe the complex functions and features of a spreadsheet application.

##### **Performance Criteria**

- (a) Describe the complex formatting features of a spreadsheet application.
- (b) Describe the complex functions of a spreadsheet application.
- (c) Identify the need for Macros.
- (d) Describe the different types of Data Validation.

#### **Outcome 2**

Create a complex spreadsheet to a given brief.

##### **Performance Criteria**

- (a) Design the structure of a spreadsheet to the brief.
- (b) Use a range of complex tools and techniques to analyse data.
- (c) Use complex functions of a spreadsheet application to meet the requirements of the brief.
- (d) Use complex features of a spreadsheet application to meet the requirements of the brief.
- (e) Rectify identified routine errors.

#### **Outcome 3**

Collaborate on the production of a complex spreadsheet.

##### **Performance Criteria**

- (a) Upload a spreadsheet to a cloud service.
- (b) Populate the spreadsheet within a cloud service.
- (c) Communicate with others within a cloud service.
- (d) Collaborate with others in the production of the spreadsheet.
- (e) Edit the spreadsheet in response to the feedback through collaboration.
- (f) Adhere to data security requirements and procedures.

## National Unit specification: Statement of standards (cont)

**Unit title:** Web Apps: Spreadsheets (SCQF level 6)

### Evidence Requirements for this Unit

Assessors should use their professional judgement, subject knowledge and experience, and understanding of their learners to determine the most appropriate ways to generate evidence and the conditions and contexts in which they are used.

Evidence is required to demonstrate that candidates have achieved all Outcomes and Performance Criteria. However, sampling may be used in certain circumstances (see below).

The evidence for this Unit may be written or oral or a combination of these. Evidence may be captured, stored and presented in a range of media (including audio and video) and formats (analogue and digital). Particular consideration should be given to digital formats and the use of multimedia.

Evidence is required for **two** types of competence: evidence of cognitive competence (knowledge and understanding) and evidence of practical competence (practical abilities).

The evidence of cognitive competence for this Unit will relate to Outcome 1 (all Performance Criteria). Evidence of cognitive competence may be sampled across the knowledge domain defined by this Unit specification, so long as the sample is unknown, and unpredictable, to the candidate. Where sampling is used to assess the learner's knowledge and understanding, an appropriate pass mark should be set.

The evidence of practical competence for this Unit will relate to Outcome 2 (all Performance Criteria) and Outcome 3 (all Performance Criteria). Evidence should be generated by the creation of at least **two complex** spreadsheets using web based spreadsheet application packages within a suitable cloud service. Where access to an appropriate web app is restricted or web functionality is limited, a locally installed spreadsheet package can be used. However the spreadsheets must be uploaded onto a cloud service.

For the purposes of Outcome 2, at least **one** complex spreadsheet must be created for a supplied brief.

The complexity of the spreadsheet relates to the use of the advanced features and collaborative aspects of the spreadsheet package; not the contents of the spreadsheet. However, the contents must serve as a vehicle to demonstrate the Performance Criteria and, as such, are expected to be non-trivial.

At least one of the spreadsheets must be shared for editing with at least **one** additional user via a cloud service. Candidates must communicate and collaborate with another user on the production of at least one complex spreadsheet via that cloud service and edit the spreadsheet based on the feedback as part of that collaboration.

Evidence of practical competence may be produced over an extended period of time; but where it is generated without supervision some means of authentication must be carried out. The Guide to Assessment provides advice on methods of authentication.

The Guidelines on Approaches to Assessment (see the Support Notes section of this specification) provide specific examples of instruments of assessment.



## **National Unit Support Notes**

**Unit title:** Web Apps: Spreadsheets (SCQF level 6)

Unit Support Notes are offered as guidance and are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

### **Guidance on the content and context for this Unit**

This Unit may be delivered as a stand-alone Unit or in combination with other Units as part of a group of Units making up an award, eg the NPA PC Passport: SCQF level 6.

The contents of this Unit provide an introduction to the complex functions and features of spreadsheets, editing and sharing files, also the collaboration using a spreadsheet within a cloud service.

Although the focus for the Unit is on practical competencies, it also seeks to provide learners with knowledge and understanding of safe working practices, so that they can transfer their knowledge and skills. For example, learners should be familiar with the concept of a user interface (UI) and appreciate that UI is a key (and variable) feature of every computing device.

An important aspect of this Unit is online safety. Safe practices should be emphasised and learners should be introduced to the basic legal constraints on their use of computing devices including introduction to Intellectual Property Rights (IPR) specifically where data is being shared between computing devices.

This Unit deals mainly with the practical use of spreadsheet applications. The learner should be aware of the correct procedure to start and shut down a computer. The learner should also be aware of how to log on to a system and the importance of logging off when they are finished using the system. The learner should know the correct procedure for starting and terminating an application package.

Learners must be aware that they must proofread their own work for accuracy. The Unit is designed to be a practical based Unit and it is anticipated that most of the time will be spent on practical work.

## National Unit Support Notes (cont)

### Unit title: Web Apps: Spreadsheets (SCQF level 6)

This Unit requires the use of cloud services, such as OneDrive, DropBox or Google Drive, to allow for sharing, feedback and collaboration. If access to cloud services is restricted in your centre then it is acceptable to use the basic functionality of the web interfaces of your chosen cloud services to upload and download files via shared links. Learners can then view or edit documents using an appropriate desktop app and, if required, upload edited versions back to the cloud. The Unit also requires communication to take place, preferably via a real time (instant messaging) service such as Skype; if this is restricted in your centre it is acceptable to use an alternate method of communication such as e-mail.

#### Outcome 1

Learners are expected to be able to describe the functions outlined in the Standard of Statements section of this document which will assess the learners' understanding of the content of the Unit.

The description of complex formatting of a spreadsheet may include, but is not restricted to, the use of conditional formatting and the use of text boxes and page layout as a way of displaying information in a professional manner.

Learners should be able to describe the complex functions to use to analyse and manipulate data (eg statistical, conditional, logical, financial and general) to meet a specified brief. This brief may include, but is not restricted to; monthly expenditure and sale figures or calculation of commission rates.

The description of a clear understanding of Data Validation, with an indication of more than one of the different types available these may include, but are not restricted to; Drop down Lists, Error Alerts.

Learners should be able to identify errors in formulas and formatting of charts. Their identification should also include a solution or a justification of why the error may have occurred these errors may include, but are not restricted to; circular referencing, incorrect cell range being used or incorrect formula.

Learners should be able to understand how Macros, are created and edited.

The learner should be able to demonstrate the different ways data can be formatted within a spreadsheet. In addition to using conditional formatting, the learner should be able to describe the use of; named ranges, outlines, notes, error messages. They should also be able to describe how to create, modify, filter and sort tables within a worksheet.

Learners should be able to demonstrate how to insert and format multimedia objects including shapes, text boxes and graphics.

## National Unit Support Notes (cont)

### Unit title: Web Apps: Spreadsheets (SCQF level 6)

As well as being able to demonstrate knowledge of the different information formats available the learner should be able to suggest why these formats would meet the needs to a range of audiences. The knowledge and understanding questions used in the assessment could be in the context of the following or similar to make it more relevant to the learner:

- ◆ Management information — budget/forecasts
- ◆ Stock control — sales figures, reordering, price list
- ◆ Survey results

### Outcome 2

Learners will be introduced to complex features of a spreadsheet application package. They are required to carry out appropriate tasks to demonstrate that they can effectively use the features to complete tasks and manage files and folders using appropriate names for ease of retrieval.

The tasks must allow the learner to demonstrate a competence in each of the following areas:

- ◆ Open and close spreadsheet application.
- ◆ Create, store and retrieve spreadsheet files effectively, in line with specified tasks which may include, but is not exclusive to; templates, importing files, adding worksheets to existing workbooks, copying and moving worksheets.
- ◆ Enter and edit numerical and other data accurately which may include, but is not exclusive to; find and replace, inserting/deleting rows/columns.
- ◆ Select and use appropriate tools to format data attributes, which may include, but is not exclusive to; text orientation, cell merge, number of decimal places and percentage.
- ◆ Select and use appropriate tools and techniques to format spreadsheet cells, rows and columns and worksheets which may include, but is not exclusive to, date formatting, text wrap, hide/freeze row/column.
- ◆ Select and use functions and formulas to meet calculation requirements such as; SUM, average, minimum, maximum, conditional, financial and statistical.
- ◆ Create, modify, filter and sort tables within a worksheet, including turning a range of cells into a table, adding and removing cells within tables, defining titles, applying styles, banding rows and columns, filtering records, sorting data on multiple columns, changing sort order and removing duplicates.
- ◆ Select and use appropriate tools and techniques to generate, develop and format a Macro.
- ◆ Select and use appropriate tools and techniques to generate, develop and format Data Validation, which may include, but is not exclusive to; Dropdown Lists, Error Alerts.
- ◆ Select and use appropriate tools and techniques to generate, develop and format Named Cells and Ranges including them in calculations.
- ◆ Select and use appropriate tools and techniques to group cells using outlines and adding subtotals to grouped cells.
- ◆ Select and use appropriate tools and techniques to generate, develop and format conditional formatting.

## National Unit Support Notes (cont)

**Unit title:** Web Apps: Spreadsheets (SCQF level 6)

- ◆ Select and use appropriate tools and techniques to generate, develop and format chart and graph types such as scatter and line from adjacent and non-adjacent cells ranges.
- ◆ Use a range of chart tools and techniques to alter labels, chart type, position/size, add additional data series and switch (transpose) source data between rows and columns of a chart in a spreadsheet.
- ◆ Use a range of tools and techniques to analyse and manipulate statistical data to meet requirements, which may include, but is not exclusive to; DcountA, Sumif, Averageif, Countif, Frequency.
- ◆ Format and modify text with functions, which may include, but is not limited to: RIGHT, LEFT, MID, TRIM, UPPER, LOWER and CONCATENATE.
- ◆ Insert and format multimedia objects including shapes, text boxes and graphics. This will include, but is not limited to: resizing objects, positioning objects, adding borders, adding styles, adding effect and adding colour to objects.
- ◆ Check information meets needs using spreadsheet tools and making corrections as necessary, which may include, but is not exclusive to; circular references and incorrect cell range used.
- ◆ Respond appropriately to any problems with spreadsheets by carrying out actions such as show formula.
- ◆ Use protection to prevent accidental editing of spreadsheet, this may include protection of a complete worksheet or individual cells.

### Outcome 3

This Outcome will provide the opportunity to apply the skills achieved in Outcomes 1 and 2 to an online spreadsheet for a given brief using a cloud service.

This Outcome focuses on using cloud devices to share, locate, update and retrieve a spreadsheet. Learners should know how to establish an internet connection and make use of browser software. They should also know how to set up and use an email account and be able to share the location of information using email and other facilities such as social networking sites and blogs.

The learner must be able to demonstrate the use of comments online within cloud stored files for a specified task, thus enabling them to communicate with others in the production of the online spreadsheet.

Learners are required to store and share a spreadsheet with at least one other person. The spreadsheet layout and design would be discussed via the online comments thus allowing for the collaboration of design with others.

A given brief must allow for the demonstration of multiply-user data population and editing of an online spreadsheet.

They should be aware of safe use procedures such as choosing secure passwords and restricting the amount of personal information available online and should know about legal requirements (such as the Computer Misuse Act, Copyright, Design and Patents Act and Data Protection Act) and local restrictions like Acceptable Use Policies. They should also be aware of ethical considerations such as intellectual property rights, behaving in an acceptable manner online (netiquette) and respecting the privacy of others.

## National Unit Support Notes (cont)

**Unit title:** Web Apps: Spreadsheets (SCQF level 6)

Throughout this Unit the learner will develop effective use of a spreadsheet application relating to online connections. Learners are required to complete the defined tasks without assistance. In the use of the internet software, the learners should be able to navigate the application and use the basic facilities efficiently. Learners should be able to open and close a browser, save and retrieve a spreadsheet document to and from a cloud service. Similarly, in the use of the e-mail software, the learners should be able to send and receive e-mails effectively.

Learners are expected to develop a basic awareness of the security risks of using cloud services and e-mail and have knowledge of the laws mentioned above.

### Guidance on approaches to delivery of this Unit

The Outcomes may be delivered in the order in which they are written. They have been written with a learning sequence in mind.

The actual distribution of time between Outcomes is at the discretion of the centre, however one possible approach is to distribute the available time as follows:

Outcome 1 and 2 — 30 hours  
Outcome 3 — 10 hours

The allocated timings allow for assessment and re-assessment where required.

It is anticipated that the required concepts will be introduced by the teacher and reinforced by appropriate examples.

A practical hands-on approach to learning should be adopted to engage learners and exemplify key concepts. Outcome 1 carries the knowledge and understanding for this Unit and it would be expected that this be taught using a range of appropriate practical activities which would underpin the appropriate knowledge to allow for the use of the features of the package.

Outcomes 2 and 3 are designed to consolidate, through practical application, the knowledge in Outcomes 1.

It is, therefore, expected that the teaching plan for the Unit will commence with Outcomes 1 and 2 where learners are introduced to the application package, its features and the uses of the package. Learners will then continue to Outcome 3 where they are introduced to cloud devices and storage.

Terminology and underpinning knowledge should be introduced in a practical context.

While teaching will necessarily focus on a specific product, learners should be made aware that alternative packages are available and should be encouraged to explore these alternatives and the generic features of the class of software should be emphasised.

This Unit may be delivered stand-alone or in conjunction with other Units. Where it is delivered alongside other Units, there is an opportunity to contextualise this Unit in terms of the contents of the other Unit(s) since this Unit's contents are generic.

## National Unit Support Notes (cont)

**Unit title:** Web Apps: Spreadsheets (SCQF level 6)

### Guidance on approaches to assessment of this Unit

Evidence can be generated using different types of assessment. The following are suggestions only. There may be other methods that would be more suitable to learners.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

A traditional approach to assessment would involve an end of Unit test of the knowledge and understanding (Outcome 1) and a practical assessment of practical abilities (Outcomes 2 and 3).

For Outcome 1 a suitable assessment may be an objective test which demonstrates that the candidate has the required knowledge. The evidence for the Outcome should be obtained under controlled, supervised conditions. The assessment will be closed-book. Achievement can be decided by the use of a cut-off score. The possibility may arise where these questions are taken as an online assessment.

It is expected that the questions will be of the multiple-choice variety. Centres may consider the use of alternative questions types, particularly if using Computer Assisted Assessment approaches. However, care should be taken that the questions are valid and at an appropriate level. The use of simple true/false question responses is unlikely to achieve this.

If a centre is presenting Outcome 1 of these assessments online the following assessment methods, where appropriate, may be selected:

- ◆ Multiple-choice
- ◆ Drag and drop
- ◆ Multiple response
- ◆ Mix and match
- ◆ a combination of the above

Where re-assessment of knowledge and understanding is required the questions presented to the candidate must be different on each assessment occasion.

It may be appropriate for some of the evidence for this Unit to be produced using e-assessment provided the national standard is applied and the conditions of assessment are consistent for all candidates. This may take the form of e-testing (for knowledge and understanding) and/or e-portfolios (for practical abilities).

## National Unit Support Notes (cont)

**Unit title:** Web Apps: Spreadsheets (SCQF level 6)

The practical tasks used in the assessment could be in the context of one of the following or similar to make it more relevant to the candidate:

- ◆ Management information — budget/forecasts, graphs showing performance
- ◆ Stock control — sales figures, reordering, price list
- ◆ Golf club — show rounds and scores for a tournament
- ◆ Survey — customers' existing computer equipment and future computer equipment

The assessment of practical skills throughout this Unit may be demonstrated in the context of a single extended task, or in the context of a number of smaller tasks. The candidate will normally demonstrate the skills during the teaching and learning activities of the Unit, rather than as separate assessment activities.

Evidence of practical competence can be stored in a portfolio. On completion of this Unit the portfolio should contain a range of evidence drawn from the Evidence Requirements for each Outcome.

If this Unit is undertaken in the workplace there may be opportunities for candidates to gather evidence in day to day workplace activities.

The practical assessment could consist of observation of the learner over an extended period of time. In this scenario, the assessor would complete an observation checklist over an extended period of time, completing the checklist as s/he observed the learner perform specific tasks, such as creating charts or editing an online spreadsheet.

### Opportunities for e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all learner evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at [www.sqa.org.uk/e-assessment](http://www.sqa.org.uk/e-assessment).

### Opportunities for developing Core and other essential skills

This Unit provides opportunities to deliver some of the following Core Skills:

*Information and Communication Technology (ICT)* (SCQF level 6)  
*Working with Others* (SCQF level 6)

This Unit involves learners using a range of features provided by spreadsheet application packages which provides opportunities to gather evidence towards the *ICT* Core Skill.

This Unit involves learners using the internet to access a cloud storage area which may provide an opportunity to gather evidence towards aspects of the *ICT* Core Skill.

## National Unit Support Notes (cont)

**Unit title:** Web Apps: Spreadsheets (SCQF level 6)

Several of the Core Skills components in *Information and Communication Technology (ICT)* can be addressed in this Unit. There are opportunities to select and start application software, use tools, enter and edit data, locate information, select information, and recognise security risks and act accordingly.

One or more of the Core Skills components in *Working with Others* can be addressed in this Unit. There are opportunities to carry out role in a co-operative activity, and seek and offer support.

In addition to Core Skills, this Unit provides opportunities to develop citizenship skills.

This Unit has the Core Skill of Problem Solving and Providing/Creating Information component of Information and Communication Technology embedded in it. This means that when learners achieve the Unit, their Core Skills profile will also be updated to show they have achieved Problem Solving at SCQF level 6 and Providing/Creating Information at SCQF level 6.

## History of changes to Unit

Version	Description of change	Date
02	Core Skill Problem Solving at SCQF level 6 and Core Skills Component Providing/Creating Information at SCQF level 6 embedded.	20/05/2016

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## General information for learners

### Unit title: Web Apps: Spreadsheets (SCQF level 6)

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

The Unit covers practical skills and key knowledge about spreadsheets. You will learn the complex features and functions of a spreadsheet and gain hands-on experience of using it. You will learn how to collaborate in the production of a complex spreadsheet within a cloud service. The Unit has a particular emphasis on using web applications, although this is not exclusive and desktop apps can be used as long as you can collaborate on spreadsheets within a cloud based service.

Although not essential it is suggested completion of the Unit *Web Apps: Spreadsheets* (SCQF level 5) would be advantageous. It is designed for an Intermediate user who wants to learn how to use advanced features and functions of a spreadsheet safely and productively.

This Unit is about the knowledge and skills required to help you use spreadsheets on personal computers and other computing devices such as tablets and smartphones along with a number of topics such as protecting shared data.

The Unit can be used for personal, educational or vocational purposes. You could use your knowledge and skills to help you in personal purposes such as learning, or you could use the Unit to improve your workplace ICT skills.

The assessment of this Unit may take different forms. You might, for example, sit a short test and carry out some practical tasks. Alternatively, you might keep a diary of your work.

This Unit is a mandatory Unit within the National Progression Award in PC Passport at SCQF level 6, and is also available as a free-standing Unit. On successful completion of this Unit, you may progress to National Certificates or Higher National Certificates in Computing or related qualifications.

The Unit will provide an opportunity to develop your *ICT* and *Working with Others* Core Skills.

This Unit has the Core Skill of Problem Solving and Providing/Creating Information component of Information and Communication Technology embedded in it. This means that when you achieve the Unit, your Core Skills profile will also be updated to show you have achieved Problem Solving at SCQF level 6 and Providing/Creating Information at SCQF level 6.