

SQA Advanced Unit Specification

General information for centres

Unit title: IT in Business: Spreadsheets (SCQF level 7)

Unit code: HP78 47

Superclass: CC

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Unit purpose

This unit is designed to allow learners to develop an understanding of spreadsheet design and how to use spreadsheet features and functions for practical and effective use in a business environment. Learners will develop knowledge and skills to allow them to create customised solutions to common business problems and scenarios. The unit is relevant to learners wishing to develop their competence in the use of spreadsheets in the workplace, or who wish to develop knowledge in skills in the application of spreadsheets more generally.

Outcomes

On completion of the unit the learner should be able to:

- 1 Design and create a spreadsheet to meet the needs of a business.
- 2 Apply statistical functions and present information in an appropriate format.
- 3 Present spreadsheet data in graphical format and evaluate information.

Credit points and level

1 SQA Credit at SCQF level 7: (8 SCQF credit points at SCQF level 7).

Recommended entry to the unit

Access to this unit is at the discretion of the centre, however, it would be beneficial if learners have achieved the NQ unit *Information Technology for Administrators* (DM3R 11) or equivalent or relevant work experience.

It would be beneficial if learners have some competence in *Numeracy* at SCQF level 4 and *Information and Communication Technology* at SCQF level 5. This may be demonstrated by possession of a relevant unit or relevant work experience.

Core Skills

Achievement of this Unit gives automatic certification of the following:

Complete Core Skill	Numeracy at SCQF level 5
Core Skill component	Critical Thinking at SCQF level 5

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

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.

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.

SQA Advanced Unit specification: statement of standards

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

Outcome 1

Design and create a spreadsheet to meet the needs of a business.

Knowledge and/or Skills

- ◆ Spreadsheet design
- ◆ Functions
- ◆ Formulas
- ◆ Cell references
- ◆ Cell formats
- ◆ Macro
- ◆ Security features for data protection

Outcome 2

Apply statistical functions and present information in an appropriate format.

Knowledge and/or Skills

- ◆ Measures of central tendency
- ◆ Summarised data
- ◆ Frequency distribution
- ◆ Standard deviation

Outcome 3

Present spreadsheet data in graphical format and evaluate information.

Knowledge and/or Skills

- ◆ Graphical representation of a single data series
- ◆ Graphical representation of multiple data series
- ◆ Chart elements
- ◆ Evaluate information

Evidence requirements for this unit

Outcome 1

Learners will need to provide evidence to demonstrate their Knowledge and/or skills by showing that they can:

- ◆ design and create a spreadsheet comprising of three interconnected worksheets for application in a business context — the spreadsheet must include two complex formulas (using the principles of BODMAS)
- ◆ in formulas and/or functions, apply two occurrences from the following forms of cell referencing: relative, absolute, named cell, named range, 3-D
- ◆ apply four functions from the following, =SUM, =IF, =SUMIF, =COUNT, =COUNTIF, =COUNTIFS =DCOUNTA, =CONCATENATE, =LEFT, =RIGHT, =NOW(), =TODAY()
- ◆ apply appropriate cell formatting which must include the use of conditional formatting
- ◆ apply a spreadsheet feature to control the worksheet view and/or layout
- ◆ record and run one macro to assist with repetitive tasks
- ◆ protect cell and worksheet data

Outcome 2

Learners will need to provide evidence to demonstrate their Knowledge and/or Skills by using statistical functions within a spreadsheet application to:

- ◆ perform calculations using one of the three methods of averaging — mean, median, mode within the same data set
- ◆ summarise data using one of the three functions to calculate: largest number in a range; smallest number in a range; number of entries in a range
- ◆ prepare a frequency distribution table
- ◆ calculate one standard deviation

Outcome 3

Learners will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ create an appropriate chart to represent a single data series
- ◆ create an appropriate chart to represent a multiple data series
- ◆ apply two chart elements
- ◆ evaluate the statistical and graphical information acquired and explain its implications for the business

Assessment of all outcomes may be undertaken in open-book conditions.

Unit specification: support notes

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 is designed to provide learners with the knowledge and skills for further study or employment in a business environment. The unit is in the SQA Advanced Diploma *Administration and Information Technology* (GM68 48) and SQA Advanced Certificate/Diploma *Business* (GM8A 47/ GM8Y48) but is also included within other SQA Advanced group awards and can be taken as a stand-alone unit.

The aim of the unit is to equip learners with the knowledge and skills in a range of spreadsheet competences that can be applied to customise solutions to the needs of business organisations. This unit has a strong vocational focus and both delivery and assessment should be contextualised within real or hypothetical business scenarios as much as possible. Teaching and assessment should strike a balance between the technical aspects and application to practical contexts. Relating content to the use of spreadsheets in the real world will provide a more meaningful experience for learners.

Each learner should be encouraged to demonstrate their own understanding and ability to design a working spreadsheet. Teaching and assessment should not be an exercise in following a series of step-by-step instructions. It is important that a holistic approach is taken so that learners develop the critical and problem solving skills to apply their knowledge and skills to create spreadsheet solutions to the needs of a range of scenarios.

The Knowledge and/or Skills within each outcome will enhance learners' understanding and problem solving skills as they progress through the unit. This unit will also allow the learners to develop skills in evaluation and analysis. Numeracy skills are prominent, particularly in outcomes 2 and 3 where learners are required to undertake several statistical measures and represent these visually in a way that can be interpreted by others.

This unit embeds part of the underpinning knowledge required for *Administration and Information Technology Graded unit 1* (HP6H 47). As learners progress they should be made aware that topic areas covered may feature in assessment of Graded unit 1. Learners could then consider when and why they would use spreadsheet functions and features and identify relevant business examples to support revision for Graded unit 1.

Progression can be made to the unit *IT in Business: Advanced Spreadsheets* (HP0H 48), which is a unit in the SQA Advanced Diploma *Administration and IT* framework.

Guidance on approaches to delivery of this unit

Teaching of this unit can be approached in several different ways. Classroom demonstrations can be recorded for use on VLE platforms. Using smartboard technologies may also be useful. It is suggested that in the main, practical tasks with an element of problem solving are used from the beginning by introducing tasks which are developed into a practice assignment in meaningful bite size chunks. This project style approach could include financial processes such as profit and loss returns, calculation of hire purchase, paylips, petty cash etc. Other business situations could involve statistical analysis numbers of visitors to an attraction, calculating break-even prices based on historical data and

projections, analysing the demographic of customers booking holidays/take-away food/clothing online etc. Such approaches could potentially be integrated with the units *Economic Issues: An Introduction* (HP6T 47) and *Digital Technologies for Administrators* (HP0M 47).

Where possible the solutions to these problems should be further evaluated using statistical and diagrammatic means. Throughout the unit, learners should be encouraged to take ownership of their spreadsheet design and use of problem solving techniques. Group work would be an option for teaching and learning to develop aspects of the Core Skill of Working with Others.

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.

Assessment of this unit is undertaken in open-book conditions.

A project based assessment which builds on the content of each outcome is recommended. Centres can take an end loaded assessment approach or assess outcome by outcome. While learners will design their own spreadsheet solution to a scenario for outcomes 1 and 3, statistical data may be provided by the centre for use in Outcome 2. Where all outcomes are assessed holistically the data should relate to the scenario used for outcomes 1 and 3.

It is recommended that the unit is assessed holistically via a single overall scenario. The scenario could take the form of a case study on a hypothetical organisation; an investigation of a real organisation; or even a real workplace situation. If assessment of all outcomes is integrated using a single scenario/problem, it is recommended that the task is broken down by outcome to allow learners the opportunity to correct any errors after assessment of each before progressing to the next.

When developing assessments, learners should not be advised of which functions are to be used, rather learners should select and apply the most appropriate for the scenario as required by the question/task instruction. A range of layouts are acceptable; however, it is important that learners are efficient in their design. Efficient use of the spreadsheet package should be instilled from the beginning.

Where a range of options are included in the evidence requirements (eg four functions from a possible twelve should be selected in Outcome 1), the stated quantity should be included in assessment, however it is critical that a range of functions/formulas etc. are covered in teaching to equip learners with a broad understanding of the capabilities of spreadsheet design. Teaching to assessment undermines the validity of assessment results.

Authenticity of evidence could be ensured by way of an assessment submission digital signature of authenticity if submitting via a VLE platform, or printed authenticity agreement if assessment submission is to be submitted in hard copy. Even where such agreements are used, centres must take measures to check the authenticity of assessment submissions. This could be done by comparing submissions for similarities that appear to be excessive and/or by questioning learners on how they arrived at their final submission. Centres should

be vigilant to the possibility of learners acquiring copies of other learners' work via the Internet.

Evidence may be printed in hard copy or stored digitally. Whatever option is chosen, evidence needs to be made available to SQA in the event of an External Verification visit.

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.

Opportunities for developing Core and other essential skills

Numeracy at SCQF level 5.

The general skill for the Using Number Core Skill component is "Carry out calculations". Outcome 1 requires learners to create a spreadsheet containing interlinking worksheets that is used to apply the rules of arithmetic formulas (BODMAS) and be familiar with the rules of conditional logic.

The other general skill for the 'Using Number' component is Work with statistical data. Outcome 2 requires learners to apply several functions relating to statistical calculations ie averages (mean, median, mode), ranges (largest number, smallest number, quantity of numbers in a range), standard deviation and frequency distribution.

The general skills for the 'Using Graphical Information' component are 'Read graphs and present information in graphical form'. Outcome 3 requires learners to prepare appropriate charts from spreadsheet data, extract relevant information from each chart type, evaluate the data and provide meaningful comment on its relevance and/or implications for the business.

Problem Solving at SCQF level 5.

The general skill for the 'Critical Thinking' component is 'Analyse a situation or issue'. Outcome 1 requires learners to design and create a spreadsheet to meet the requirements of a business scenario, which may be a problem or customised tool to support a standard business process. Learners are required to analyse a scenario to find a spreadsheet solution for a business need, by identifying the component to include in the initial spreadsheet design, assessing the benefits and limitations of the proposed design, and by then testing the design. The finalised spreadsheet will provide reliable information about the scenario to managers within the business, who can then use it to make strategic or operational decisions about the business.

This Unit has the Core Skill of Numeracy SCQF level 5 is embedded in this unit. When a learner achieves the unit, their Core Skills profile will also be updated to include this Core Skill.

SQA Advanced Unit Specification

The Critical Thinking component of problem Solving at SCQF level 5 is embedded in this unit. When a learner achieves the unit, their Core Skills profile will also be updated to include this component.

Administrative information

Version	Description of change	Date

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

FURTHER INFORMATION: Call SQA's Customer Contact Centre on 44 (0) 141 500 5030 or 0345 279 1000. Alternatively, complete our [Centre Feedback Form](#).

General information for candidates

Unit title: IT in Business: Spreadsheets (SCQF level 7)

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.

Along with word processing packages, the most widely used software application is spreadsheets. This unit will introduce you to the different uses of spreadsheets, ranging from creating financial reports to handling lists of data and preparing charts to provide solutions to common business problems.

Outcome 1 concentrates on spreadsheet design and creation. You will create relevant single or multiple spreadsheet files and consolidate the data within related worksheets to provide summary information for a business problem.

Outcome 2 develops the use of spreadsheet statistical functions for the numerical summary of data to aid decision-making. You should use frequency distribution tables and statistical functions to summarise information and then draw conclusions based on a common business problem.

Outcome 3 develops skills for the graphical representation of data. You will use chart elements to identify and describe patterns, direction of tendency and exceptions as you draw conclusions based on a common business problem.

This unit should develop critical thinking skills as you should be able to judge the appropriate spreadsheet formulas and functions for the presentation and summary of data to provide solutions to a given situation and communicate their findings to aid problem solving.

The achievement of this unit will give automatic certification of the following:

The Core Skill of *Numeracy* and the Core Skill component of Critical Thinking at SCQF level 5.

You may also have opportunities to develop the Core Skill of *Information and Communication Technology* and the Core Skill Components Planning and Organising and Reviewing and Evaluating at SCQF level 5.