



**INFORMATION AND
COMMUNICATION TECHNOLOGY**
SCQF Level 6
40 Hour Unit (F3GC 12)

CORE SKILLS ASSESSMENT SUPPORT PACK

Part 1: Information for tutors

What is involved?

This Unit is about using information and communication technology (ICT) to access, process, and present information in personal, workplace, social, and educational situations. The focus of the Unit is on transferable ICT skills:

- ◆ using computer systems
- ◆ using applications software
- ◆ finding information from electronic data sources

At this level, learners are expected to be able to work with a computer system independently, effectively, and responsibly to carry out complex processing tasks. They will be working in contexts not wholly familiar to them. They should be able to use the computer independently and in contexts that require some design and selection.

Learner motivation can be maximised by making the ICT activities as relevant as possible to the learner's likely uses for ICT. The activities should be drawn from the learner's personal, workplace, social, or educational situation. In addition, integration of the ICT activities with those of other SQA qualifications being undertaken should be explored. For example, when a learner is undertaking other National Qualifications, motivation for ICT can be increased if the activities are related to these National Qualifications and the learner can see the direct relevance of the ICT. If you do decide to adopt this approach, separate records of assessment decisions must be kept for this Unit and evidence for this Unit should be clearly accessible.

Assessment and evidence

Assessment is likely to use a combination of observation and learner-produced supporting evidence (product evidence) such as printouts, screenshots, and files.

You should try to identify naturally occurring opportunities for assessment where possible. For learners who are also working towards vocational or subject-specific Units, opportunities for assessment of ICT skills could arise while completing tasks that provide evidence for both the vocational/subject-specific Unit and this Unit. Some of the exemplars in this pack could be used or contextualised for this purpose.

When you are assessing by observation, it is essential to keep a detailed checklist. When you are assessing by oral questioning, you must keep a copy of the questions asked and the answers given.

All items of evidence should be signed and dated by you.

Part 3 of this pack supplies exemplar forms that you can use to record successful completion of each of the Unit tasks. You can sign and date these as the learner achieves each task to keep a record of the learner's progress.

Planning

You should work out where opportunities for meeting the standard are likely to arise. Where possible this should be built into the assessment process. You should discuss this assessment process with the learners so that they are quite clear about what is expected from them.

Guidance on the Unit

What learners need to know or be able to do

The Unit states that learners will:

- ◆ select and start up software (eg word processing, spreadsheet, database, media packages) to perform a range of activities
- ◆ be aware of common hardware and software problems, and resolve simple hardware or software problems (eg using on-screen help, software and hardware manuals)
- ◆ enter and edit data using appropriate applications software
- ◆ locate and extract information in different formats (eg text, numbers, graphics, video, audio) from a range of local or remote data sources (eg the internet, CD-ROM, intranet, own computer)
- ◆ apply a complex search strategy to find information (eg choice of sources, order of searching, choice of keywords, use of search logic, application of search parameters, menu and open choice searching)
- ◆ evaluate the information found against a set of criteria you select (eg currency, level of difficulty, reliability, authority, bias, relevance, appropriateness of format)
- ◆ evaluate the complex search strategy (eg did it produce information that matched the chosen criteria, was it effective in terms of time and cost, did it successfully filter out irrelevant information?)
- ◆ present information in an appropriate mode (eg display on screen, print out, play an audio file)
- ◆ keep data secure and well managed (eg keeping own login and password secure, virus protection, backing up data, maintaining personal file area)

At SCQF level 6 learners are expected to work independently using their own initiative. You will be available for consultation on the assessment requirements of the Unit, but should not be required to provide support with the learners' tasks. You should, however, make sure that learners are familiar with the four areas of ICT detailed in this Unit.

(i) ICT operations

This covers everyday interaction with the operating system, application software, and computer hardware. Learners must be able to carry out the following activities:

- ◆ select and start up software to perform a range of activities
- ◆ be aware of common hardware and software problems, and resolve simple hardware and software problems
- ◆ present information in an appropriate output mode

(ii) Processing information using ICT

Using the chosen software learners must be able to:

- ◆ enter and edit data

The list of bullet points given in the Unit may give the impression that the bulk of the time should be spent on the accessing information activity. This is not the case. The Unit requires the learners to use at least one type of applications software to process complex problems. In solving these problems, learners are expected to encounter software features with which they may be unfamiliar. They should use their own initiative and consult help systems and manuals as necessary.

Complex tasks may require the use of information from more than one source, integrating the results into a final product. This can include situations where different features of an application are applied serially to information or those where several streams of data are each processed by the appropriate application and finally integrated. Learners will have to spend some time in refining the task's problem to analyse the information requirements and design their solution.

Learners must have experience of using at least one software application. They should already have in-depth knowledge of this package as well as the experience of approaching unfamiliar features.

Although not mentioned specifically in the Unit, learners should complete their tasks efficiently within a reasonable timescale, accurately, and with results meeting the desired purpose.

(iii) Accessing information using ICT

At SCQF level 6 learners have to show that they can independently effectively and efficiently carry out complex information searches, including the following:

- ◆ carefully define the search topic and evaluation criteria
- ◆ establish a complex search strategy
- ◆ locate and extract the relevant information from a range of sources
- ◆ evaluate the information found
- ◆ review the complex search strategy

Before starting the searching, learners should spend some time producing a precise specification of the search and deciding on criteria with which to evaluate the results.

The search will be complex due to the precise nature of the information to be found. This means that learners should specify the search with no possibility of ambiguity.

In order to evaluate the information found, learners will create a set of search criteria. These might include relevance to search, correct level of detail, currency of data, and appropriateness of format. Particularly for information searched via the internet, learners should look at the likely reliability of the data, being aware of bias and of the possibility of a deliberate hoax.

Learners should create a strategy in which the most likely sources are selected, a logical order of searching the sources decided, the best search terms (keywords) chosen, and search logic is used to combine search terms.

As each item of information is found, it should be evaluated to see how well it matches the search criteria.

Once the results have been produced, learners are required to look at how well their search strategy worked. For example, they might look at the ease with which it produced required results; the possibility that it left out some useful results; the effectiveness in terms of cost and time.

It is expected that the information be both located and integrated. The results of the search will be a presentation or a report on the search topic.

It is likely that learners who carry out searches routinely will perform the above steps automatically. However, for the purposes of the Unit, all the above steps must be documented. Only one search is required.

Searching need not be limited to the internet. It can be related to information held on the learner's own machine or on local databases. The information sought need not be text based and could be graphical or multimedia based. As an indication of complexity, the Unit states:

'The searches must involve multiple data sources and require several straightforward choices, or have a less obvious structure, or more complex inter-relationships. The searches must involve different data sets and different forms of search or different types of data'.

Although the search has to be documented, possibly as a written report, the resulting information should be presented by learners in the appropriate manner, eg displayed on screen or played as an audio file.

(iv) Keeping information safe

Learners must demonstrate safe practice with the information that they handle, using:

- ◆ password security
- ◆ anti-virus protection
- ◆ backing up of data
- ◆ maintenance of personal file area

Learners are expected to carry out the above routinely. In some situations there will be policies that lay down exact procedure and some aspects such as backups will be run automatically. Learners will be expected to follow these policies. With regards to the automatic processes, learners must understand exactly what these do and appreciate their importance.

Gathering evidence

It may be appropriate for you to gather written evidence produced by the learner while carrying out the practical activities. However, written evidence is not essential for this Unit and is inappropriate if it disadvantages the learner.

You may wish instead to use oral questioning. This requires you to create and complete record sheets comprising a checklist, questions asked, and learner responses. From the learner's point of view, it is useful to have the means of keeping all the work of this Unit together. You can help here by creating and providing a workbook that includes all the evidence-gathering items. An alternative would be to provide worksheets that can be made into a paper based or e-portfolio.

If you have chosen to integrate the ICT work with that of other Units being undertaken by the learner, it may be possible to assess the ICT as part of a larger single activity. In this case you must keep separate records for this Unit.

The Unit requires learners to carry out ICT tasks that involve accessing and processing information. This may be achieved in many ways. Some typical activities might be:

- ◆ searching multiple internal databases, which are unfamiliar, to gather names and addresses to create a mailing list of potential donors to a charity
- ◆ using a software package to analyse results of a community survey
- ◆ calculating the increase in running costs of a department in the light of salary increases
- ◆ using a software package to model alternative layouts for a garden

It may be possible to create a single activity that would provide evidence for the whole Unit. Because of the requirement for complexity, such as integrating information in the processing section, the information accessing activity could lead naturally on to the processing one.

An alternative approach might be, for example, to use four tasks. Each task could cover one of the areas discussed in the previous section. These are:

- ◆ ICT operations
- ◆ Processing information using ICT
- ◆ Accessing information using ICT
- ◆ Keeping information safe

Disabled learners and/or those with additional support needs

The additional support needs of individual learners 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.

Part 2: Assessment guidance

You can use the exemplar assessments given in this section in several ways:

- ◆ to help identify the type and the amount of evidence that the learner needs to produce
- ◆ to help identify the level of complexity in evidence required for the Core Skill at this level
- ◆ to help you create an assessment task related to the learner's own situation

You can use the following information to create task sheets to be used with the learners in assessment sessions. The task sheet will contain the assessment items and you can leave appropriate space for the learners to insert their responses.

Learners must complete all four tasks.

Task 1 is designed to cover ICT operations.

Task 2 is designed to cover processing information using ICT.

Task 3 is designed to cover accessing information using ICT.

Task 4 is designed to cover keeping information safe.

For each of the tasks, successful completion should be noted on a checklist.

Task 1: ICT operations

This task covers the Unit requirements to:

- ◆ select and start up application software (eg word processing, spreadsheet, database, media packages) to perform a range of activities
- ◆ be aware of common hardware and software problems, and resolve simple hardware and software problems (eg using on-screen help, software and hardware manuals)
- ◆ present information in an appropriate mode (eg display on screen, print out, play an audio file)

You should be able to assess the learners for this task by observation. The activities for the other tasks will normally require the learners to carry out these points. There will be explicit opportunities to observe presenting of information during Tasks 2 and 3. You can create a learner task sheet to remind the learners what is to be assessed. As an example you could tell the students the following scenario:

Over the next weeks, your tutor will observe your performance in ICT operations. You may be asked questions about what you are doing as you are working.

Your tutor will want to make sure that you:

- ◆ *seek out and make effective use of the software for the tasks you carry out*
- ◆ *be aware of common problems and solve simple problems in operating hardware and software by finding help and information using on-screen help, online help, and hardware manuals*
- ◆ *present information in appropriate output modes (eg screen display, print, playing of multimedia files)*

Your tutor will make it clear to you the time period over which this assessment is to take place.

You should certainly give warning that you are going to be assessing the four points. If any of the points are not observed by you as the learners are carrying out their activities, you can make a point of asking them to demonstrate the point to you. For instance if a learner does not need to use online screen help during Task 2 or 3, you can ask the learner to demonstrate it to you.

Task 2: Processing information using ICT

This task covers the Unit requirements to:

- ◆ enter and edit data using appropriate applications software

A single complex processing operation is required. At this level learners should be encountering suitable ICT processing problems in their personal, workplace, social, or educational situations. Ideally, you are required to give guidance only. Particularly you may need to advise that a learner's chosen problem is complex enough for the assessment of this task.

The task can be completed successfully using only one software application. An appropriately complex task will require learners to explore a facet of the software package that they have not previously encountered.

In some contexts, learners may use more than one software application. In this case, either one of the software applications or a feature of one of the applications should be new to the learners and require them to use help facilities to familiarise themselves.

You can create a learner task sheet showing what is required. As an example you could use the following as a basis:

You are required to carry out a complex processing task. This is likely to involve several steps using a software package and the integration of a number of sources of information. You are likely to have to explore and use software features that you are unfamiliar with.

To complete this task successfully, you must work within a reasonable timescale, accurately, and with results meeting the desired purpose.

You will need to decide on a problem you have that may be suitable for this task. Your tutor will discuss this with you and guide you in its specification to include all the requirements for the Unit.

Your tutor will observe your performance at various stages in the task and will want to inspect your output product.

You will need to carry out the following steps:

- 1 Discuss with your tutor the details of the processing task.*
- 2 Create a specification for the task detailing the information sources, processing, and output information.*
- 3 Choose appropriate software features, familiarising yourself with them as necessary.*
- 4 Carry out the processing.*
- 5 Create the output data in the desired format.*

6 *Produce any additional documentation required.*

Regarding the final point 6, if the output format is a formal report, no other documentation may be required. However, for other output products you may ask the learner for additional documentation to explain the processing steps or parameters.

Here are some examples:

Personal/social context

The learner wishes to create a comprehensive database of a non-copyright-controlled music collection. This would involve illustrative materials and audio files using a database package. The database developed would hold all the materials and the learner would create standard search routines to enable the collection to be searched and the item presented or played.

Educational context

The learner wishes to set up a data base logging and processing system for a project being undertaken. Four different variables are being explored. This involves automatic real-time data logging. Each variable will be logged with its own file of results. The task is to use a spreadsheet application to process the raw data in the files and produce the average, and standard deviations for the four variables. The output is to be presented as charts that could be incorporated into a report.

Workplace context

The learner works in finance and is carrying out a project relating to predicting the swings in valuations for stock and shares. This will make use of historical data for the past 20 years and a stock market modelling package. Four representative stocks are to be used for a comparison of the predictions of the package and the real-world behaviour. The results from the package should be in the form of graphs that can be used in a report.

Task 3: Accessing information using ICT

This task covers the Unit requirements to:

- ◆ locate information in different formats (eg text, numbers, graphics, video, audio) from a range of local or remote data sources (eg the internet, CD-ROM, intranet, own computer)
- ◆ apply a complex search strategy to find information (eg choice of sources, order of searching, choice of keywords, use of search logic, application of search parameters, menu and open choice searching)
- ◆ evaluate the information found against a set of criteria they select (eg currency, level of difficulty, reliability, authority, bias, relevance, appropriateness of format)
- ◆ evaluate the search strategy (eg did it produce information that matched the chosen criteria, was it effective in terms of time and cost, did it successfully filter out irrelevant information?)

Learners must carry out a detailed information search using a complex search strategy, criteria, and evaluation. At this level learners ought to be encountering suitable information accessing problems in their personal, workplace, social, or educational situations. Your main contribution will be in helping the learners to decide upon a suitably complex search that covers all the required activities.

You can create a learner task sheet based on the following:

You are required to carry out a complex information task where you will search for information. You are asked to document all stages of it. The complexity of the task relates to the need to use several sources of information and locate very precise data.

You will need to carry out the following steps:

- 1** *Discuss the topic of your search with your tutor.*
- 2** *Define precisely the search topic.*
- 3** *Draw up evaluation criteria for the results of the search.*
- 4** *Draw up a search strategy, including points such as likely sources, order of use of sources, and suitable search terms (keywords).*
- 5** *Carry out the searching process.*
- 6** *Evaluate the items of information you find using your evaluation criteria.*
- 7** *Evaluate your search strategy in the light of the information you have found.*
- 8** *Document your search.*

Search topics are likely to be for very specific and hard-to-find information. Here are some suggestions.

Personal/social context

The learner is searching for details on all the still extant 1910s Morgan motor cars.

Educational context

The learner is searching for details of traditional Scottish customs still performed in the East of the USA.

Workplace context

The learner is searching for possible breaches of a patent method.
In each case, the results can be integrated into a report on the topic.

Task 4: Keeping information safe

This task covers the Unit requirements to:

- ◆ keep data secure and well managed (eg keeping own login and password secure, virus protection, backing up data, maintaining personal file area)

This is split into the four items:

- ◆ importance of password security
- ◆ appropriate use of anti-virus software
- ◆ operation of a data backup policy
- ◆ maintenance of personal file area

You may be able to assess learners for this task by observation. You can create a learner task sheet to remind the learners what is to be assessed. As an example you could use the following as a basis:

Over the next weeks, your tutor will observe your performance in keeping information safe. You may be asked questions about what you are doing and your tutor may ask to see your computer folders. Your tutor may wish to see you carrying certain operations with your computer.

Your tutor will want to make sure that you:

- ◆ *are aware of the importance of password security*
- ◆ *use anti-virus software appropriately*
- ◆ *operate a data backup policy*
- ◆ *maintain your personal file area*

Your tutor will make it clear to you the time period over which this assessment is to take place.

You should certainly give warning that you are going to be assessing the four points.

An alternative is to explore the points during discussion with the learners. This should cover the need for the precautions as well as how the learners implement them. You can ask to see the learners checking a file with the anti-virus software. You can also ask to inspect their personal file area and backups of data.

Part 3: Exemplar recording documentation

This section provides sample forms that can be used by learners and tutors to gather evidence and record assessment decisions.

If you have created task sheets, as described in Part 2, they can be used as an assessment record sheet to be completed by the learner directly or used by you to note the result of the discussions with the learner which should be signed and dated by you.

There is an assessment checklist for each of the tasks to be completed, signed, and dated by you.

The final form is a summary checklist recording Unit progress to be completed, signed, and dated by you.

Assessment checklists

Learner:		
Task 1: ICT operations		
<ul style="list-style-type: none"> ◆ Select and start up software (eg word processing, spreadsheet, database, media packages) to perform a range of activities ◆ Be aware of common hardware and software problems, and resolve simple hardware and software problems (eg using on-screen help, software and hardware manuals) ◆ Present information in an appropriate mode (eg display on screen, print out, play an audio file) 		
Activity	Achieved (tick)	Tutor initials and date
1 Selects and starts up software		
Comments		
2 Is aware of common hardware and software problems and can resolve simple problems		
Comments		
3 Presents information in an appropriate mode		
Comments		
Date of completion:	Tutor signature:	

Learner:		
Task 2: Processing information using ICT		
◆ Enter and edit data using appropriate applications software		
Activity	Achieved (tick)	Tutor initials and date
1 Enters data as appropriate using the application software chosen		
Comments		
2 Edits data as appropriate using the application software		
Comments		
Date of completion:	Tutor signature:	

Learner:		
Task 3: Accessing information using ICT		
<ul style="list-style-type: none"> ◆ Locate and extract information in different formats from a range of local or remote data sources (eg the internet, CD-ROM, intranet, own computer) ◆ Apply a complex search strategy to find information (eg choice of sources, order of searching, choice of keywords, use of search logic, application of search parameters, menu and open choice searching) ◆ Evaluate the information found against a set of criteria they select (eg currency, level of difficulty, reliability, authority, bias, relevance, appropriateness of format) ◆ Evaluate the complex search strategy (eg did it produce information that matched the chosen criteria, was it effective in terms of time and cost, did it successfully filter out irrelevant information?) 		
Activity	Achieved (tick)	Tutor initials and date
1 Search topic defined precisely and complex search strategy applied		
Comments		
2 Evaluation criteria is drawn up and information found during search is evaluated		
Comments		
3 Search strategy is evaluated		
Comments		
4 Information is located and extracted from at least three different sources		
Comments		
Date of completion:	Tutor signature:	

Learner:		
Task 4: Keeping information safe		
◆ Keep data secure and well managed (eg keeping own login and password secure, virus protection, backing up data, maintaining personal file area)		
Activity	Achieved (tick)	Tutor initials and date
1 Password security		
Comments		
2 Anti-virus software		
Comments		
3 Maintenance of personal file area		
Comments		
4 Backup of data		
Comments		
Date of completion:	Tutor signature:	

Summary checklist

Learner:		
Learner number:		
Centre:		
Task	Date achieved	Tutor signature
1: ICT operations		
2: Processing information using ICT		
3: Accessing information using ICT		
4: Keeping information safe		

ADMINISTRATIVE INFORMATION

Credit value

6 SCQF credit points (1 SQA credit) at SCQF level 6



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