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ASSESSMENT and QUALIFICATIONS ALLIANCE

General Certificate of Secondary Education

Applied Information and Communication Technology (Double Award) 2010

Special Features

- This specification replaces Part One GNVQs in Information and Communication Technology
- Offers a Double Award – equivalent to two GCSE qualifications
- Clear statements about what candidates need to learn
- One assessment per unit
- The scheme of assessment for Unit 3 comprises an externally marked Assignment

This specification should be read in conjunction with:

Specimen Assessment Materials
Reports on the Examination
Assessment Criteria

This specification will be published annually on the AQA Website (www.aqa.org.uk). If there are any changes to the specification centres will be notified in print as well as on the Website. The version on the Website is the definitive version of the specification.

Further copies of this specification booklet are available from:

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or
can be downloaded from the AQA Website: www.aqa.org.uk

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Background Information

1 General Certificate of Secondary Education

1.1 Introduction

The General Certificate of Secondary Education in Applied Information and Communication Technology (Double Award) replaces the Part One GNVQ Foundation and Intermediate qualifications. This GCSE (Double Award) provides a vocationally related qualification, which covers both Level 1/Foundation and Level 2/Intermediate of the national qualifications framework. It has been designed to provide a broad education as a foundation both for training leading to employment, and for further and higher education.

1.2 Changes to Part One GNVQ

ICT

The National Curriculum requires that candidates should be given opportunities to apply and develop their Information and Communication Technology (ICT) capacity through the use of ICT tools to support their learning. In each specification candidates will be required to make effective use of ICT in ways appropriate to the needs of the subject.

It is anticipated that a variety of ICT skills could be developed in courses of study based on this specification. The internally assessed units could facilitate opportunities for extended use of ICT.

Tiering

The GNVQ Part One was offered at Foundation and Intermediate Levels. This GCSE covers both levels; the assessment units for AQA's GCSE in Applied ICT (Double Award) will not be tiered.

Citizenship

From 2002, candidates in England are required to study Citizenship as a National Curriculum subject. Each GCSE (Double Award) specification must signpost, where appropriate, opportunities for developing citizenship knowledge, skills and understanding. See Section 12 of this specification.

Spiritual, moral, ethical, social, cultural, environmental, health and safety and European issues

All specifications must identify ways in which the study of the subject can contribute to an awareness and understanding of these issues. See Section 12 and Appendix E.

1.3 Changes to the ICT Criteria

The criteria for the GCSE in Applied ICT (Double Award) were new for the examination in 2003.

1.4 Key Skills

All GCSE specifications must identify, as appropriate, opportunities for generating evidence on which candidates may be assessed in the "main" Key Skills of Communication, Application of Number and Information Technology at the appropriate level(s). Also, where appropriate, they must identify opportunities for developing and generating evidence for addressing the "wider" Key Skills of Working with Others, Improving own Learning and Performance and Problem-Solving.

In order to assist teachers, these are summarised in Appendix D.

2

Specification at a Glance
Applied ICT (Double Award)

All three Units are compulsory.
Details of the assessment requirements are given in each Unit.

GCSE Applied ICT 3851	
Unit 1 ICT Tools and Applications Internally assessed portfolio	$33^{1}/_{3}$% of total marks
Unit 2 ICT in Organisations Internally assessed portfolio	$33^{1}/_{3}$% of total marks
Unit 3 ICT and Society Externally set and assessed assignment	$33^{1}/_{3}$% of total marks

Applied ICT (Double Award)
3851

3 Availability of Assessment Units and Entry Details

3.1 Availability of Assessment Units

Assessments based on this specification are available as follows.

	Externally Assessed Unit	Portfolio Moderation for each Unit	Qualification
January	✓		✓
June	✓	✓	✓

3.2 Entry Codes

Normal entry requirements apply but the following entry information should be noted. The Subject Code for entry to the GCSE in Applied ICT (Double Award) is 3851. In addition, an entry for individual Units is required, using the following Unit codes.

Unit 1 – 38501
Unit 2 – 38502
Unit 3 – 38503

3.3 Classification Codes

Each specification is assigned a national classification code, indicating the subject area to which it belongs.

Centres should be aware that candidates who enter for more than one GCSE qualification with the same classification code will have only one grade (the highest) counted for the purpose of the School and College Performance Tables.

The **Classification Code** for this specification is 0010.

3.4 Private Candidates

This specification is available to private candidates only if they have already received a result for the internally assessed units which have not been used in a subject award.

Entries for the internally assessed units are not accepted from private candidates.

Private candidates should write to AQA for a copy of *"Supplementary Guidance for Private Candidates"*.

3.5 Access Arrangements and Special Consideration

AQA pays due regard to the provisions of the Disability Discrimination Act 1995 in its administration of this specification.

Arrangements may be made to enable candidates with disabilities or other difficulties to access the assessment. An example of an access arrangement is the production of a Braille paper for a candidate with a visual impairment. Special consideration may be requested for candidates whose work has been affected by illness or other exceptional circumstances.

Further details can be found in the Joint Council for Qualifications (JCQ) document:
Access Arrangements and Special Consideration
Regulations and Guidance Relating to Candidates who are Eligible for Adjustments in Examination
GCE, AEA, VCE, GCSE, GNVQ, Entry Level & Key Skills
This document can be viewed via the AQA web site (www.aqa.org.uk)

Applications for access arrangements and special consideration should be submitted to AQA by the Examinations Officer at the centre.

3.6 Language of Examination

All Assessment Units are provided in English only.

Scheme of Assessment

4 Introduction

4.1 National Criteria

This AQA GCSE in Applied ICT (Double Award) specification complies with the following:

- The GCSE (Double Award) Subject Criteria for ICT;
- The GCSE, GCE, GNVQ and AEA Code of Practice April 2008;
- The GCSE (Double Award) Qualification Specific Criteria;
- The Arrangements for the Statutory regulation of External Qualifications in England, Wales and Northern Ireland: Common Criteria.

4.2 Rationale

The fundamental philosophy of this specification is that, in order to develop an understanding of the vocational significance of Applied ICT, candidates must actively experience the ICT environment. Therefore, the AQA GCSE in Applied ICT (Double Award) has been designed to:

- introduce candidates to work related learning;
- provide candidates with an overview of the sector;
- give candidates the technical knowledge, skills and understanding associated with the subject at these levels;
- equip candidates with some of the skills they will need in the workplace or in further education or training;
- empower candidates to take charge of their own learning and development;
- provide a range of teaching, learning and assessment styles to motivate candidates to achieve the best they can.

Assessment is designed to give credit for what candidates can do as well as what they know. It is based both on internally set portfolio evidence and an external assignment, which is set and marked by AQA.

This specification is supported by a range of professional institutes and Further and Higher Education Institutions.

4.3 Prior Level of Attainment and Recommended Prior Learning

No prior learning is required for this qualification, but students must have sufficient skills, understanding and knowledge in the Key Skills of Application of Number, Communication and Information Technology to be able to cope with the demands of the course. This is likely to require a basic level in literacy and numeracy, e.g. National Curriculum level 3. It is also accepted that mature students may bring prior learning through experience gained from their place of employment.

Entry level qualifications will also provide a basis for the study of the GCSE in Applied ICT (Double Award).

4.4 Progression

This qualification is a recognised part of the National Qualifications framework. As such, GCSE provides progression from Key Stage 3 to post-16 studies.

It lays an appropriate foundation for further study of ICT or related subjects at GCE/VCE Advanced Subsidiary and Advanced levels.

It also enables candidates to progress to a Modern Apprenticeship in, for example, an ICT Technical Consultancy and/or a NVQ.

In addition, it provides a worthwhile course for candidates of various ages and from diverse backgrounds in terms of general education and lifelong learning.

Employment

Information and communication technology is an important and fast growing employment sector and the well-developed personal skills (e.g. teamwork, problem solving, initiative) combined with work-related knowledge gained within the GCSE (Double Award) means that students are suitable for recruitment, albeit at a junior level initially, in a range of fields.

5 Aims

A course based on this specification should encourage candidates to:

a. Develop a broad range of ICT skills and knowledge of the uses of ICT in vocational contexts, as a basis for progression into employment or further learning in ICT-related fields;

b. build on their previous experience in a number of National Curriculum subjects at key stages 1, 2 and 3 and will satisfy the requirements of the programme of study at Key Stage 4 for Information and Communication Technology for England.

6 Assessment Objectives

6.1 Candidates must demonstrate their ability to:

AO1 apply ICT purposefully and effectively in vocational contexts;

AO2 work independently to analyse needs and to design, implement, test, evaluate and document information and communication systems for use by others in vocational contexts;

AO3 apply knowledge and understanding of the role and significance of ICT systems and methods in business, industry, the public sector and society;

AO4 reflect critically on their own use of ICT and on the way other individuals and organisations use ICT, including the social, economic, political, legal, ethical, moral and environmental issues and security needs for information.

7 Scheme of Assessment

7.1 Introduction

This GCSE is assessed by means of a combination of external assessment (externally set and marked) and internal assessment.

Each Unit is assessed by one method only.

7.2 External Assessment

The following Unit has an external assessment:

Unit 3: ICT and Society.

The Assignment

For this unit, candidates must complete **three tasks** set by AQA. These tasks are generic in their nature and will not change. As the GCSE in Applied ICT is a vocational examination, the three tasks must be carried out within the context of real life situations in society which the candidates know or have learnt, and which are appropriate to the ability and circumstances of the candidates. The tasks will allow candidates to apply the knowledge and understanding they have gained from teacher-designed activities and projects.

The three tasks collectively (to be called "the Assignment") must be about the impact of ICT developments on society.

Five aspects/areas of society will be studied:

- Businesses and organisations
- Working styles and new employment opportunities
- Law and order
- Entertainment and leisure
- Personal communications.

Not all of these five areas/aspects will be available for each series of the examination. AQA will select a sample of them for the June series of the examination and this sample will be repeated for the following January series. The sample chosen will be published in the *AQA-Assessed Unit: Candidate's Booklet* which must be issued to candidates for the "specified period" for the examination series concerned.

The specified period for the Assignment

There will be two "specified periods" each year:

1 November to 21 January (for the January series) and

1 March to 14 May (for the June series).

Controlled lesson times

It is expected that, within the specified period, the production of the three tasks comprising the Assignment will take place during normal ICT lesson times. It is expected that such controlled lesson time will not be less than 10 hours' duration and not more than 20 hours. Controlled lesson times must be logged on the document, *Record of Controlled Sessions,* provided in the booklet, *Instructions and Guidance for Teachers,* issued at the beginning of each specified period.

The booklet contains instructions and further details on the conditions under which the Assignment for Unit 3 must be conducted and must be read by the supervising teacher(s) before candidates begin work during the specified period.

All tasks will be set and marked by AQA and will be available each year in the January and June series of the examination.

7.3 Internal Assessment

Unit 1: ICT Tools and Applications

and

Unit 2: ICT in Organisations

are internally assessed.

Moderation will be available in June each year.

7.4 Weighting of Assessment Objectives

The approximate relationship between the relative percentage weighting of Assessment Objectives (AOs) and the overall Scheme of Assessment is shown in the following table.

Assessment Objectives	**Unit Weightings (%)**			**Overall Weighting of AOs (%)**
	Unit 1	**Unit 2**	**Unit 3**	
AO1	16.7	5.0	6.7	28.4
AO2	3.3	15.0	6.7	25.0
AO3	10.0	8.3	13.2	31.5
AO4	3.3	5.0	6.7	15.0
Overall Weighting of Units	33.3	33.3	33.3	100.0

Subject Content

8 Unit 1 *ICT Tools and Applications*

8.1 About this Unit

In this unit you will learn about the ICT tools and applications available and how these are used by different organisations. You will investigate how local businesses use ICT tools and applications, or you might use Case Study materials, or a mixture of both.

You will learn how to use a range of applications, including:

- word processing
- publications and presentation software
- spreadsheets
- databases
- multimedia
- web browsers and email.

You will also learn how to use ICT tools and applications to:

- develop documents for different purposes
- find, store and manipulate data.

You will also learn how ICT tools and applications can be used to develop business documents to meet communication needs, and how standard ways of working are used in ICT.

You will also find out that some organisations use more specific ICT tools and applications, such as CAD/CAM or control technology, and that they use them for particular purposes, such as monitoring data or image creation.

This unit is assessed through portfolio work. Your overall result for the unit will be reported as a mark on the Uniform Mark Scale, see Section 19.

8.2 What you need to Learn

Using ICT applications

Different applications have different tools and facilities. You need to learn what needs are met by these kinds of application software and when and how to use their different features. You must be able to carry out the listed activities for each of the following applications.

Presentation of information using word processing, publications and presentation software	• enter, cut, copy, paste and move text • format text, e.g. justify, change font • incorporate clip art/graphic images and tables • make use of document formatting features, e.g. headers, footers, bullet points • use word wrapping facilities around images/objects • use mail-merge facilities, e.g. merging database data into a document
Organisation and analysis of numerical information using spreadsheet software	• enter a range of data e.g. text, number • format cells to match data types • cut, copy, paste and move data between cells, rows and columns • insert and delete rows and columns • enter and replicate formulae • use simple functions e.g. SUM, AVERAGE • produce charts with labels e.g. axis titles, legends • use relative and absolute cell references • print selected areas
Organisation and analysis of structured information using database software	• prepare database structure and validation rules for different data types e.g. text, currency, date • enter data including use of data entry forms • establish a relationship between fields in two tables • search and sort including use of related tables • produce reports showing the results of searches and sorts
Organisation and presentation of information using multimedia software	• establish structure and navigation route through the presentation • create and/or find the separate components of the presentation e.g. text files, images, sound files • produce the individual frames/layers/backgrounds/slides • combine the separate components to create a final presentation • edit the separate components and the final presentation
Communication, searching and selection of information using the Internet	• use email for communication between individuals and groups • understand and apply the main search principles of Internet search engines e.g. string • searches, multiple criteria searches • understand and apply the main features of browser software e.g. forward and back buttons, book marking and organising favourites • purposefully navigate large web sites e.g. locate a specific

information resource in a given site

Investigating how ICT is used in organisations

Having developed skills in a variety of applications, you must explore how and why the different applications can be used in different organisations. You need to understand that some organisations also use specific applications that:

- capture, manipulate and enhance graphic images
- automate and control processes including CAD/CAM
- monitor and record physical and environmental data for analysis and interpretation.

You must be able to identify why the type of application is appropriate for the organisation's purposes and what tools and facilities make it appropriate. For example, libraries use databases to track the location of books.

You must use a variety of information sources, including the Internet, and acknowledge them.

Developing business documents

Organisations use a variety of documents to communicate with different audiences and pass on different types of information. You must look at a range of document layouts e.g. memos, letters, faxes, web pages, magazine layouts, interactive presentations, data capture forms, financial plans and database reports.

You must understand that to communicate effectively documents must be carefully planned and the following factors considered:

- purpose of the document
- target audience
- writing style and tone
- presentation style e.g. use of colour and images
- layout e.g. booklet, poster, web site with frames
- accuracy, clarity and consistency e.g. error correction and use of house style.

It is important to remember that all these factors have an impact on the final design.

Having looked at a range of business documents, you should be able to use what you have learned when you are producing your own documents. Your documents must:

- meet their intended purpose
- be appropriate for their target audience
- take into account any other design considerations.

File management and standard ways of working

There are many reasons for having standard ways of working in ICT. The most important is that information in ICT systems can be easily lost or misused, and that having standard ways of working can help you to overcome these problems.

In your work with ICT, you must ensure that you:

- keep information secure, e.g. from theft, corruption, viruses, fire

- protect confidentiality, e.g. prevent unauthorised access to documents or records
- respect copyright, e.g. not using the work of others without permission
- save work regularly and use different filenames
- keep dated backup copies of files in another location
- manage your work effectively, e.g. use appropriate filenames and locations
- work safely, e.g. use the correct position for the monitor and chair, avoid trailing cables, take regular breaks
- take account of relevant legislation and codes of practice.

8.3 Assessment Requirements

You must produce:

- a report reviewing a range of documents used by businesses and produced using a range of the specified software applications;
- (using the applications in the specification) original documents for different business purposes that show a range of writing styles and layouts. The documents must be in printed form;
- evidence of your use of ICT tools to search for information, select and organise information, and, communicate information;
- a report or presentation that describes the main features of the use by appropriate organisations of image manipulation software; automation and control processes, including sensing;
- evidence of effective file management and standard ways of working.

It is expected that candidates will meet the requirements of this unit by producing no more than 20 sides of A4.

8.4 Assessment Criteria

Report Reviewing Documents (up to 21 marks)			
0 - 4 marks Candidate produces a basic description of the content, layout and purpose of two business documents produced using at least a single software application	**5 - 11 marks** Candidate produces a more detailed description of the content, layout and purpose of two business documents produced using two of the specified software applications, and attempts an evaluation of the suitability for purpose of the collected documents	**12 - 17 marks** Candidate produces a very detailed description of the content, layout and purpose of business documents produced using three software applications and evaluates the suitability for purpose of the collected documents	**18 - 21 marks** Candidate produces a very detailed and well-structured description of the content, layout and purpose of business documents produced using three software applications and evaluates in detail the suitability for purpose of the collected business documents, suggesting how they could be improved
Production of Documents (up to 25 marks)			
0 - 5 marks Candidate produces some documents which demonstrate capability with one software application	**6 - 13 marks** Candidate produces a range of documents which demonstrate good capability with two of the specified software applications, including effective use of ICT tools to search for, select and organise information from a range of sources	**14 - 18 marks** Candidate demonstrates capability to integrate two software applications to produce documents, including searching, selecting and organising information using ICT tools	**19 - 25 marks** Candidate integrates three software applications to produce complex documents that are fit for purpose
Description and Evaluation of Documents (up to 22 marks)			
0 - 6 marks Candidate indicates clearly how the software features are used to meet the purposes of the documents produced	**7 - 14 marks** Candidate produces corrected and annotated drafts to show how the documents were developed	**15 - 18 marks** Candidate produces corrected and annotated drafts of documents and attempts a basic evaluation of documents	**19 - 22 marks** Candidate produces corrected and annotated drafts of documents and evaluates own documents by comparison with similar commercially produced documents
Report or presentation on organisations using a range of sensing and image manipulation software (up to 13 marks)			
0 - 3 marks Candidate describes two features of the use by organisations of CAD/CAM, sensing, control or image manipulation software	**4 - 7 marks** Candidate describes three main features and purposes of the use by organisations of CAD/CAM, sensing and control and image manipulation software	**8 - 10 marks** Candidate describes in detail three main features and purposes of organisations' use of CAD/ CAM, sensing and control and image manipulation software and evaluates briefly the impact on businesses of this use	**11 - 13 marks** Candidate describes in detail three main features and purposes of organisations' use of CAD/ CAM, sensing and control and image manipulation software and evaluates in detail the impact on businesses of this use
Standard ways of Working (up to 19 marks)			
0 - 7 marks Candidate uses standard ways of working and file management systems	**8 - 11 marks** Candidate develops a directory system that manages information sources and documents for this unit, including drafts and working documents	**12 – 14 marks** Candidate develops an effective directory system that manages all information sources and documents, and candidate verifies two information sources	**15 - 19 marks** Candidate develops an effective directory system that manages all information sources and documents, candidate verifies three information sources and shows how these information sources have been verified

8.5 Essential Information for Teachers

This unit is assessed by the centre through evidence in the candidate's portfolio. Candidates are required to complete a portfolio that covers the assessment requirements of this unit. To fulfil these requirements candidates need to take part in a planned learning programme covering the knowledge, skills and understanding which are specified in the *What you need to learn* section of the unit.

Centres should ensure that sufficient time is given to the teaching of the key terms and concepts contained within the unit before embarking on the portfolio.

Guidance on Delivery

This unit provides candidates with the opportunity to consider the ways in which ICT can be used to prepare and present documents and information, to consider how ICT can be used to organise information and communicate with others, and to investigate and review the use of ICT in a range of organisations. Candidates will also consider the range of business documents in common use and produce some documents of their own.

As part of the learning process, candidates will also develop an understanding of the standard ways of working in ICT, and learn and use some of the standard conventions that are adopted.

Teachers are likely to begin the delivery of this unit by reminding candidates of the ways in which the most common software packages are used. The focus at this stage is likely to be on word processing, desktop publishing, presentation spreadsheets, database and Internet browsing software. It is important that candidates are taught the generic concepts underlying the use of software as well as the practical use of each package. Candidates must understand that the particular brand of software they are using is merely one example from a range, and it is that range which the unit is concerned with.

Candidates will be expected to experience the use of the full range of applications as detailed in the specification. Having developed skills with those applications, they must then be able to explore the use of the applications by different organisations.

Candidates are then required to produce a report reviewing a range of documents used by businesses. It is important that candidates experience as wide a range of documents as possible, and these documents should cover a wide quality range. The teacher may wish to introduce candidates to the idea of document review by distributing the same set of documents to all members of the group. These documents could be 'real' documents collected by the teacher or could be generated by the teacher to demonstrate a number of issues. For examples, documents could contain a number of spelling, grammatical or typographical errors or have poor layout features, and candidates could be asked to identify the errors and suggest improvements to the documents. Feedback from this activity could then allow candidates to develop a 'check list' to bear in mind when considering the quality and effectiveness of documents. This could then be used to review a number of documents collected by the candidates themselves – leaflets and flyers, brochures, etc.

Having reviewed a range of documents, candidates should then have a good understanding of the requirements for a 'good' document, i.e. one which is effective and satisfies its purposes. They are then in a position to produce a series of documents of their own.

It is important that the document creation process is as 'realistic' as possible so that candidates can see a purpose to the activity. The teacher may wish to create a fictitious scenario on which the documents are based, perhaps a new company which is setting up and needs a set of standard documentation and marketing materials.

Candidates may find it more rewarding to work with a local company. If the Centre has developed links with local organisations, these could be used to work with the students on the task. Links developed by students through work experience, community service, part-time jobs, etc would be an ideal 'client' for the student. A brief could be agreed, parameters set and a range of documents generated to meet specific needs. It is important, however, that both candidates and teachers are aware of the requirements of the assessment criteria to ensure that the task satisfies these in addition to meeting the needs of the client.

Other purposes for the documents could be adopted. For example, a letter requesting information from an organisation could be sent to a person in the organisation; an advertisement for something could actually be displayed; and an invitation could be designed for an actual event.

A focus of this unit is on composing documents suited to different purposes. This involves students in using a full range of software applications. Candidates should be able to identify which application is most appropriate for a given purpose.

Candidates will also explore the ways in which organisations use a range of styles of documents to communicate information.

Choosing and using a suitable style helps to ensure that a document gives a clear and appropriate message.

For example, a letter written to an employer asking for work would be written in a style that makes the reader give the application serious consideration. It might not be an appropriate place to make a joke or to use casual phrases that are often used in conversation. A letter that starts with, "Dear Sir, I am writing to you to apply for work in your organisation," is likely to create a different impression to a letter that begins with, "Hi, I'd really love a job with you lot!" However, if you are inviting people to a party then, "Hi, I'd really love you to come to my party!" is more casual and friendly than, "Dear Friend, I would be very pleased if you could attend my party." However, this style is not wrong if it creates a tone that is right for your purpose.
Choosing the right style of writing is very important to ensure the document gives the right message. A writing style can be: formal (job application letter, letter of complaint, company report); informal (letter to a friend, party invitation, note for the milkman); intended to create an impact or be noticed (advertisement, direction sign); or suited to the age of the reader (children's book, newspaper).

Formal styles of writing are more commonly used in business. Formal documents may also be very structured (this document, invoice, income tax form, report) where rules apply to things such as the size and position of headings, fonts to be used and the use of graphics.

Making information easy to understand depends partly on how it is organised and presented on the page, and on what form it takes.

A diagram can often simplify information that would require many words to describe. Number information is sometimes best displayed in the form of a table where the structure of rows and columns helps the reader to understand the numbers. In other cases number information is best displayed in the form of a chart or graph. These can immediately show trends in the numbers, which may not be easy to see when the numbers are shown in a list or table.

In tables and graphs, using colour, borders and shading can help to make information easier to read and understand. The shading of alternate rows in a table helps to make the rows easier to read.

While the candidates are producing a set of documents to meet the requirements of the specifications, they should keep records of their progress. Draft copies should be retained and annotated to show development and correction of errors. Documents should be annotated by the candidate to show this development. Finally, the candidate should compare his/her own documents with similar documents produced commercially. This aspect, again, could be carried out in association with the 'client' company for realism.

The emphasis here again is on realism, and centres are encouraged to develop links with local companies who use such technology. Although the hardware and software will be available in some centres for use by candidates, it is useful for candidates to see also real applications in industry and other organisations.

The unit also considers a range of standard ways of working in ICT. It is suggested that this topic is covered at the start of the GCSE (Double Award) programme, as the routines and principles involved apply to all areas of the course, although they are explicitly assessed in this unit. Once candidates have been made aware of the standard ways of working as detailed in the specification, and have adopted those routines, they should be encouraged to use them at all times, both in the GCSE (Double Award) units and also in other areas of the curriculum where they make use of ICT.

Guidance on Assessment

The content of this Unit will be assessed in five tasks and it is expected that centres will assess their candidates' work as the delivery of the Unit progresses.

There are 100 marks available in total for this Unit; these are awarded for evidence presented in the candidate's Portfolio of Work. This portfolio will be assessed internally by the centre and moderated by AQA. There is no external examination for this Unit.

When assessing a candidate's work, assessors should consider the level of attainment in three broad areas:

- independence and originality in the evidence presented for assessment;
- the depth and breadth of understanding of the content of the unit.

Centres should also be aware that the Assessment Criteria in section 8.4 of this specification are intended to be cumulative However, it is possible for a candidate's performance in one criterion in one cell of the Assessment Criteria to be compensated by a better performance in another criterion in another cell for the same task. Assessors will be expected to use their professional judgement to arrive at the final mark for a task, based upon the standard determined by AQA.

The individual rows of the Assessment Criteria for the individual tasks must be considered separately when awarding marks. There are no vertical links between the criteria rows.
Candidates who produce no evidence for a task must be awarded 0 marks.

Report Reviewing Documents

The first task in this Unit is a report reviewing a range of documents. **It is important to note that** work submitted for moderation by AQA must be accompanied by the documents upon which the report is based. Failure to do so is likely to result in a significant negative adjustment to the marks for this task. Centres are strongly advised to ensure that all candidates submit such documents when the internal assessment of portfolios is taking place to ensure that delays do not occur when the moderator requests a sample of candidates' work from the centre.

Candidates who produce work which is assessed to be at the lowest level can be awarded up to 4 marks out of 21. These candidates will have provided a very basic description of the documents, limited to simple comments about their appearance and content. Candidates awarded 3 or 4 marks are likely to have attempted simplistic comments about the purpose of the documents. Comments will be based upon documents produced using a single software application.

Candidates whose work is at the second level of attainment can be awarded up to 11 marks out of 21. These candidates will have produced a better quality description of the documents. As well as detailing the content and purpose of the documents effectively, candidates at this level will have commented on the suitability of the documents for their purpose, and there will be some description of how the documents meet the needs of their users. Comments produced by candidates at the lower end of this range may be relatively superficial, with candidates at the top end including more detailed descriptions of content, layout and the purpose of the documents, even though evaluative comments may be slightly simplistic.
Candidates will have based their comments on documents produced using two of the specified applications.

Candidates at the third level may be awarded up to 17 marks. These candidates will have produced much more detailed responses, with very detailed descriptions of the content, layout and purpose of the documents, and well thought-out evaluative comments on the

suitability of the documents for their users. Candidates at this level will have considered documents produced using three different software applications.

Candidates at the highest level may be awarded up to the full 21 marks. These candidates will have produced very detailed descriptions of the content, layout and purpose of the documents; they will have offered detailed and thoughtful evaluative comments, and they will also have suggested appropriate ways in which the documents could be improved, based upon their evaluation. Candidates are likely to have considered documents produced using the full range of software applications.

Production of Documents

The second focus of this Unit is the production by the candidate of a set of documents, and their consequent description and evaluation. This section is worth almost half of the total marks for the Unit, 47 out of 100.

Candidates at the lowest level can be awarded up to 5 marks out of 25 for the production of their documents. Candidates at the higher end of this range will produce more than one document, but are required to use only one software application.

Candidates at the second level may be awarded up to 13 marks out of 25. These candidates will have used two of the specified software applications in the production of more than documents, although any document may have been produced using only one application. Candidates at this level will have obtained at least some of the information for their documents using ICT tools such as searches and sorts.

Candidates at the third level will have used two software applications, and will have produced two effective documents using more than one application. Candidates at this level will have made quite extensive use of ICT tools to obtain and organise the information used in their documents. These candidates may be awarded up to 18 marks.

Candidates working at the highest level for this task may be awarded up to 25 marks. They will have used a full range of software effectively in both documents, one of which will be complex. These candidates will have obtained a wide range of information by extensive use of ICT tools.

Having produced the range of documents, candidates may then be awarded up to 22 marks for descriptions and evaluations of those documents.

Description and Evaluation of Documents

Candidates working at the lowest level will describe how the features of the applications software are used to meet the purposes of the documents produced. Those at the top of this lowest level may be awarded up to 6 marks for a clear description.

Candidates may be awarded up to 14 marks for producing three corrected and annotated drafts of their documents, in addition to producing the documents themselves. It is expected that the drafts demonstrate the progression and the development of the documents in addition to simple error correction, and the annotations will make it clear the form which that development has taken.

Candidates who also attempt an evaluation of their documents may be awarded up to 18 marks. It is acceptable for this evaluation to be quite basic for 15 marks; those which include more detailed evaluative comments may be awarded up to the full 18 marks.

Candidates working at the highest level for this task will be awarded up to 22 marks. Those candidates will have produced corrected and annotated drafts, and also a detailed and thoughtful evaluation of their own documents. Candidates at the top of this level will have compared their own documents with similar documents produced commercially, and will have made meaningful comparative comments.

The final focus of the Unit is the production by the candidate of a report or presentation on organisations' use of software. Candidates may be awarded up to 13 marks for this task.

Organisations' use of software

Candidates working at the lowest level will produce a basic description of some features of the use by organisations of the various types of software listed. This description will be simplistic and will rely more on the descriptions of the software than the relation to organisations' use. These candidates may be awarded up to 3 marks.

Candidates may be awarded up to 7 marks for a more detailed description of the features and purposes of the various types of software. This description will cover most or all of the main features and purposes, and will relate more closely to the use of the software by organisations.

Candidates may be awarded up to 10 marks for a detailed description of the main features and purposes of organisations' use of the various types of software which also includes comments on the impact of this use on the organisation. Candidates may be awarded 8 marks for a brief and superficial evaluation, up to 10 marks for more substantial and thoughtful comments.

Candidates who include a detailed discussion on the impact on the organisation of the use of the range of software may be awarded up to 13 marks.

Standard Ways of Working

Candidates working on this Unit are expected to adopt the standard ways of working, as detailed in the specification.
Candidates may be awarded up to 7 marks for saving their files using appropriate filenames and following the standard ways of working as detailed in the specification.

Candidates who create a more structured system for file saving that incorporates a range of structured directories for containing the various documents produced and also the information sources in a clear and easily-identified way may be awarded up to 11 marks.
Candidates who create an effective directory structure as outlined above, and also provide evidence of verifying some of their information sources may be awarded up to 14 marks, whilst candidates who also demonstrate how the information sources have been verified by including, for example, references to their provenance or alternative sources of information, may be awarded up to the full 19 marks.

8.6 Resources

For this unit students will need access to word processing software capable of incorporating graphic elements and producing tables, desktop publishing software, spreadsheet software, database software, and multimedia presentation software capable of incorporating graphic elements and sound files. Students will also need access to the Internet using a suitable browser, and an email browser. It is likely that an integrated 'office' software package will meet the requirements of candidates.

All work submitted to the teacher for assessment for Unit 1 must be produced on a computer and printed in hard copy (work in other media will not be accepted), **otherwise marks cannot be awarded for the work.** However, special consideration can be requested of AQA for candidates whose work, including the ability to use a computer in its production, has been affected by illness or other exceptional circumstances. Further information about the circumstances when special consideration may be requested is given in section 16.3, "Factors Affecting Individual Candidates", of the specification. Information about the procedure is issued separately in the document, *Regulations and Guidance relating to Candidates with Particular Requirements*, which can be obtained from AQA.

If a candidate is absent or for some other reason has fallen behind in computer hours, teachers should be able to accommodate such occasional absence by ensuring that the opportunity is created for them to make up any sessions missed during which work on the tasks for submission to the teacher for assessment takes place. Similarly if, for whatever reason, a candidate has difficulty producing work on a computer, it will be expected that the centre will create an opportunity to make good this work.

8.7 Key Skills Guidance

Details of opportunities for Key Skills development and assessment are provided in Section 11, 'Key Skills and Other Issues' and in Appendix D.

9 Unit 2 *ICT in Organisations*

9.1 About this Unit

Most organisations use ICT in some aspects of their work. You might investigate how local businesses use ICT, or you might use Case Study materials, or a mixture.

In this unit you will learn about:

- how and why organisations use ICT
- the main components used to design an ICT system
- how ICT systems are designed.

You will learn how to design, implement and test a system and represent it graphically.

This unit is assessed through portfolio work. Your overall result for the unit will be reported as a mark on the Uniform Mark Scale, see Section 19.

9.2 What you need to Learn

How and why organisations use ICT

ICT systems meet particular organisational needs. You need to learn how to identify the components used in an ICT system and describe their contribution to the overall purposes of the system.

Organisations use ICT systems according to their needs. The needs of some organisations are met by limited use of ICT. However, many organisations have a variety of needs that are met by extensive use of ICT systems. For example, a video rental shop will use a database system to link customer records to video rental records. This means that, for example, fines can be calculated for late returns, video rental trends can be monitored and targeted mail shots can be produced.

ICT systems need clear and accurate information to be able to function effectively. You need to be able to describe the information requirements of a system. This will include broad characteristics such as information about production, sales and finances, as well as specific details such as data formats or sampling rates where appropriate. For example, the customer database for a video rental shop should include "Date of Birth" information to prevent customers renting videos which they are not old enough to watch, and the detailed design should specify the format of the "Date of Birth" field.

You need to understand that large organisations are often divided into departments which carry out the four main functions of business:

- sales: processing transactions involving the sale of goods or services provided by the organisation
- purchasing: processing transactions involving the purchase of goods or services required by the organisation

- finance: managing the flow of money in and out of the organisation
- operations: carrying out the main business of the organisation.

You must understand that departments communicate and exchange information with each other, and with external bodies such as customers and suppliers. You must also understand why and how organisations use ICT to:

- communicate effectively internally and with suppliers and customers
- manage and control a production process
- manage finance (payroll, budgeting/forecasting, transactions, reporting)
- manage stock control
- market products and services efficiently.

You will investigate how departments in an organisation use ICT to communicate and function effectively.

Main components of an ICT system

You must be able to identify and know the purpose and characteristics of the main hardware components of an ICT system including:

- input devices e.g. keyboard, mouse, scanner, bar code readers, sensors
- processors e.g. central processing unit (CPU)
- output devices e.g. screen, printer, speaker, motor
- ports and cables e.g. parallel, serial, universal serial bus (USB)
- storage devices e.g. RAM, hard drive, CD, DVD, floppy disk.

Some systems use additional devices, e.g. networked systems need network interface cards (NICs), and systems accessing the Internet may use a modem or ADSL connection. You need to find out about network protocols and network services which are central to the movement of data within and between organisations.

You must learn how to match applications software to users' processing needs when designing ICT systems, including:

- word processing, publications and presentation
- spreadsheet
- database
- multimedia
- graphics
- control and monitoring.

You must understand that ICT systems often integrate features of more than one application to meet user needs.

How ICT systems are designed and implemented

You must learn how to design and implement an ICT system. To do this you must:

- identify the user requirements
- produce a design specification, including specifying information sources, input, process and output requirements, and the types of application software needed
- test the system under a range of conditions
- implement the system
- produce user documentation for the system
- evaluate the design and implementation of the system, by checking against user requirements, and making any necessary modifications and improvements.

The flow of information in an organisation can be represented using dataflow diagrams. These diagrams are often used when considering how an ICT system could solve an information processing problem in an organisation.

You must learn how to produce simple dataflow diagrams to give an overview of an ICT system.

Having investigated and understood the use of ICT in a range of organisations, you must be able to design and produce an ICT system for a given situation. The system might replace and update an existing ICT system, or it might replace an overloaded manual system.

9.3 Assessment Requirements

You must produce

- a review and report describing how and why organisations use ICT systems for the given purposes. You should include details of the information requirements of the ICT systems, the associated flow of information between and within organisations, the impact of ICT systems on the functions of organisations;
- a review or report covering the specification that describes the purpose and characteristics of the main hardware components of an ICT system;
- an ICT system designed to meet the needs of a particular organisation. You should include dataflow diagrams, the design specification, user documentation and commentary on the development;
- evidence of evaluation and testing.

It is expected that candidates will meet the requirements of this unit by producing no more than 20 sides of A4.

9.4 Assessment Criteria

Description of ICT Systems (up to 23 marks)

0 - 5 marks	6 - 9 marks	10 - 17 marks	18 - 23 marks
Candidate produces a basic description of two features of the use of ICT by two contrasting organisations	Candidate produces a more detailed description of three features of the use of ICT by two contrasting organisations and describes briefly two advantages and two disadvantages of these systems	Candidate produces a very detailed description of the main features of the use of ICT including two advantages and two disadvantages, and the impact of ICT systems within organisations, referring to working practices, cost and also information and processing characteristics, using three different sources	Candidate produces a very detailed and well-structured description of the main features of ICT use, including advantages and disadvantages, impact, details of information and processing characteristics of the chosen systems, referring to verifying data, security and robustness, using a three sources, showing evidence of validation

Hardware (up to 18 marks)

0 - 6 marks	7 - 12 marks	13 - 18 marks
Candidate produces a basic description of two hardware features of ICT systems.	Candidate produces a more detailed description of three main hardware features of ICT systems including the ways in which components are connected	Candidate produces a detailed and well-structured description of hardware features that determine overall efficiency and cost of ICT systems

Design of ICT System (up to 35 marks)

0 - 4 marks	5 - 9 marks	10 - 16 marks	17 - 24 marks	25 - 28 marks	29 - 35 marks
Candidate produces a basic description of the design for the ICT system, including purpose, benefits and information requirements	Candidate describes in more detail the design for the ICT system, and represents system in an appropriate graphic manner	Candidate produces a very detailed description of the design for the ICT system, represents system graphically and models system using ICT.	Candidate describes in detail, represents graphically and models ICT system, including evidence of operation of system and commentary on the system development	Candidate describes in detail and models ICT system supported by evidence of development and describes critical success factors for system	Candidate describes in detail data types and sources, processing requirements and outputs, illustrating solution with a large data set

Evaluation and Testing of ICT System (up to 24 marks)

0 - 6 marks	7 - 10 marks	11 - 14 marks	15 - 19 marks	20 - 24 marks
Candidate provides evidence of refinements to system, including results of testing with a range of data, and describes efficiency and robustness of solution	Candidate produces documentation for system written in a style appropriate to the intended user	Candidate tests system against all practical initial conditions, and produces systematic documentation of results.	Candidate provides evaluation of system, including evidence from third party.	Candidate provides detailed evaluation of system and also of user documentation including third party feedback.

9.5 Essential Information for Teachers

This unit is assessed by the centre through evidence in the candidate's portfolio. Candidates are required to complete a portfolio that covers the assessment requirements of this unit. To fulfil these requirements candidates need to take part in a planned learning programme covering the knowledge, skills and understanding which are specified in the *What you need to learn* section of the unit. Centres should ensure that sufficient time is given to the teaching of the key terms and concepts contained within the unit before embarking on the portfolio.

Guidance on Delivery

This unit requires candidates to develop a knowledge and understanding of the ways in which organisations use a range of ICT systems.

For the first part of the unit, candidates are required to describe the main features of the use of ICT systems by two contrasting organisations, and identify the advantages and disadvantages of these systems. In doing so, they will observe the impact of ICT systems within their organisations, including reference to cost, efficiency, changes in working practices, system security and robustness. More able candidates should consult a variety of sources as part of their research, and show how they validated their information. They will then use the information gathered to make informed judgements about future trends in information processing requirements and capabilities.

Examples are given in the "*What you need to learn"* section of the specification, although these are not intended to be exhaustive, and centres are encouraged to draw on local examples.

It is expected that students will undertake research into where ICT is currently being used and explain their findings. They will then be able to reflect on their studies and predict future requirements and capabilities.

Students should explore areas with which they are familiar, the range of organisations available locally will vary from centre to centre, and most students will be able to use a variety of contacts. It may be that part of the research can be carried out as part of a work experience project, or using other contacts. Students should arrange visits to local organisations in order to carry out their research.

It is assumed that centres will already have developed links with a range of outside agencies, and these agencies will be useful in providing candidates with details of ICT systems in use. Local Chambers of Commerce and similar local business organisations are always keen to work with schools and colleges, and centres should use this expertise. Many Rotary Clubs and similar organisations have sections keen to work with schools, and may be able to provide useful contacts. Other organisations such as Trident or perhaps the local Careers service are also very important liaison points.

Centres will use the available expertise in a range of ways appropriate to specific needs, and use will be negotiated at local level. Most companies and organisations are willing to become involved in carefully planned visits, external speakers may be considered appropriate where visits cannot be arranged. Company web sites and those of business and employer organisations may also provide relevant information.

In the second part of the unit, candidates are required to identify user needs and define appropriate hardware and software. More able candidates should be expected to produce more detailed descriptions, design plans, annotation and evaluation that those working at lower levels.

Dependent on local circumstances, centres or individual candidates may wish to work closely with a local company as a 'client' for whom a suitable system can be designed and built. Alternatively, the teacher may wish to create a fictitious scenario on which the design of the system by the students can be based.

The unit gives students an opportunity to learn how to relate the needs of a user to the equipment specification. For example, to process large and complex graphic image files a system with large amounts of RAM, a large and quick hard drive, and a high speed CPU are required.

It is important that the development of the system is as realistic as possible. Centres must provide candidates with the full range of hardware with which the system can be built. It is expected that this range will include a selection of alternatives from candidates may make a choice. Whilst it is appreciated that in some cases there may be a need to deploy old or surplus equipment for this task, it is not acceptable for non-working components to be supplied, as this would preclude candidates from achieving higher marks for testing.

Once students have designed a system to meet a user's needs, they are required to test that system against all practical initial conditions and produce systematic documentation of their results. More able candidates should evaluate their documentation, including third-party feedback. This again could be done by an external organisation rather than the teacher. Ideally the candidate will have worked with the client throughout the development process, and the evaluation is the last part of this relationship.

Guidance on Assessment

The content of this Unit will be assessed in four tasks and it is expected that centres will assess their candidates' work as the delivery of the Unit progresses.

There are 100 marks available in total for this Unit; these are awarded for evidence presented in the candidate's Portfolio of Work. This portfolio will be assessed internally by the centre and moderated by AQA. There is no external examination for this Unit.

When assessing a candidate's work, assessors should consider the level of attainment in three broad areas:

- independence and originality in the evidence presented for assessment;
- the depth and breadth of understanding of the content of the unit.

Centres should also be aware that the Assessment Criteria in section 9.4 of this specification are intended to be cumulative. However, it is possible for a candidate's performance in one criterion in one cell of the Assessment Criteria to be compensated by a better performance in another criterion in another cell for the same task. Assessors will be expected to use their professional judgement to arrive at the final mark for a task, based upon the standard determined by AQA.

The individual rows of the Assessment Criteria for the individual tasks must be considered separately when awarding marks. There are no vertical links between the criteria rows.

Description of ICT Systems

Candidates who produce no evidence for a task must be awarded 0 marks.

The first task within this Unit requires candidates to produce a review and report describing how and why organisations use ICT systems for given purposes.

Candidates may be awarded up to 5 marks out of 23 for a basic description of two features of the use of ICT by two contrasting organisations. It is acceptable for the organisations to be identified either by the candidate or by the teacher. Candidates in this range will produce purely descriptive evidence, which may be superficial in nature.

Candidates may be awarded up to 9 marks for producing a more detailed description covering three main features of the use of ICT by the organisation which includes brief reference to two advantages and two disadvantages of the systems. This evidence will be more specific and in-depth than that required for the lower range of marks.

Candidates may be awarded up to 17 marks out of 23 for a very detailed description, including two advantages and two disadvantages. Candidates in this range will include details in their comments about working practices, costs, and the characteristics of both the information used and the processing that takes place. Candidates at the lower end of the range are required to produce only simplistic descriptions, whereas those awarded higher marks, 15 and above, will have included more detailed analysis and observations rather than purely descriptive notes. Candidates at this level are expected to have used three sources for their information.

Candidates in the next tier of achievement may be awarded up to the full 23 marks available for this task. These candidates will, in addition to the requirements for the lower ranges, have referred to the security of data in their responses. Those achieving 21 marks or above will also have included evidence of validation of their sources of information.

Hardware

Candidates may be awarded up to 6 marks out of 18 for a basic description of two hardware features of an ICT system. Those who describe only one feature may be awarded no more than 3 marks.

Candidates who produce a more detailed description of features may be awarded up to 12 marks. Those at the top end of this range are required to include in their descriptions details of the way in which the components are connected.

Candidates in the top tier of achievement may be awarded up to 14 marks. These candidates will have produced a very detailed description of hardware items which is structured for ease of understanding. Candidates awarded 15 marks or more must have included in their description details of the cost of ICT systems.

Those who also comment on the efficiency of systems may be awarded up to the full 18 marks for this task.

Design of an ICT system

The second task requires candidates to design an ICT system to meet the needs of a particular organisation.

Candidates at the lowest level may be awarded up to 4 marks out of 35. They will produce a basic description of the design. Candidates awarded 3 or 4 marks are required to have included basic details of the purpose of the design, its benefits and information requirements.

Candidates producing a more detailed description may be awarded 5 or 6 marks. Candidates may be awarded up to 9 marks for representing their system graphically in addition to a description.

Candidates who produce a very detailed description of their system, along with a graphical representation, may be awarded up to 12 marks. To be awarded up to 16 marks, candidates are required to use ICT to model their system.

Candidates working at the next tier of achievement may be awarded up to 19 marks for including basic evidence of the operation of their system without comments, and up to 24 marks for an appropriate and relevant commentary on the development of their system. This commentary should include details of the various stages of development, but may be descriptive, rather than critical.

Candidates may be awarded up to 28 marks for including in their commentary a description of the success factors for the system. Again, evaluative comments are not required at this level.

Up to the full 35 marks may be awarded to candidates who include detailed descriptions of the types and sources of data and processing requirements. Basic descriptions may be awarded no more than 31 marks. Candidates at the top of this range achieving 33 marks or more will be required to have illustrated their solution using large data sets.

Evaluation and Testing

Candidates at the lowest tier of achievement may be awarded up to 6 marks out of 24. These candidates will demonstrate that they have tested their system with a range of data. To be awarded 3 or more marks they must provide evidence of having refined their system, and those at the top end of this lower range, earning 5 or more marks, will have included a descriptive comment on the robustness of their solution.

Candidates may be awarded 7 marks for producing basic documentation for their system, 8 marks for fuller documentation, and up to 10 marks for writing their documentation in a style appropriate to the intended, identified, user.

Candidates who also provide evidence of testing their system may be awarded up to 12 marks. In order to achieve up to 14 marks, candidates must included full systematic documentation of these results.

Candidates at the next higher tier of achievement are required to evaluate their system, and may be awarded up to 16 marks for a basic evaluation. Those who include evidence of evaluation by a third party may be awarded up to 19 marks.

Candidates who provide a more detailed evaluation of their system, including feedback from a third party, may be awarded up to 21 marks. Those who also provide detailed evaluation of their user documentation may be awarded up to the full 24 marks available for this task.

9.6 Resources

For this unit students will require word processing software for the production of evidence. Students will need access to the full range of computer hardware, including input devices such as keyboard, mouse, scanner, bar code reader, sensors, processors and output devices such as printer VDU, speaker, motor. They will also need access to storage devices including, for example, hard drive, CD, DVD, floppy disk. The hardware must be in a form appropriate for the building of an ICT system.

All work submitted to the teacher for assessment for Unit 2 must be produced on a computer and printed in hard copy (work in other media will not be accepted), **otherwise marks cannot be awarded for the work.** However, special consideration can be requested of AQA for candidates whose work, including the ability to use a computer in its production, has been affected by illness or other exceptional circumstances.

Further information about the circumstances when special consideration may be requested is given in section 16.3, "Factors Affecting Individual Candidates", of the specification. Information about the procedure is issued separately in the document, Regulations *and Guidance Relating to Candidates with Particular Requirements*, which can be obtained from AQA.

If a candidate is absent or for some other reason has fallen behind in computer hours, teachers should be able to accommodate such occasional absence by ensuring that the opportunity is created for them to make up any sessions missed during which work on the tasks for submission to the teacher for assessment takes place. Similarly if, for whatever reason, a candidate has difficulty producing work on a computer, it will be expected that the centre will create an opportunity to make good this work.

9.7 Key Skills Guidance

Details of opportunities for Key Skills development and assessment are provided in Section 11, 'Key Skills and Other Issues' and in Appendix D.

10 Unit 3 ICT and Society

10.1 About this Unit

This unit helps you understand the ways in which ICT systems affect everyday life. This unit explores how individuals as well as families, clubs and societies, work teams and community groups use ICT in their personal, social and professional lives.

Some individuals and groups do not have access to ICT, yet ICT still affects their lives.

New ICT products and applications are being developed all the time and the pace of development is very fast. You will explore how and why ICT can have negative as well as positive effects.

You will consider how developments in technology have influenced and may continue to influence areas, such as:

- Businesses and organisations
- Working styles and new employment opportunities
- Law and order
- Entertainment and leisure
- Personal communications.

This unit builds on the contents of units 1 and 2, and also your wider knowledge and experience of ICT.

This unit is assessed through evidence provided in the Assignment. Your overall result for the unit will be reported as a mark on the Uniform Mark Scale, see Section 19.

10.2 What you need to Learn

What technologies are available

You will need to know about the wide variety of technology that is available to help us to access and exchange information and carry out transactions as well as technology which we use to keep ourselves organised and entertained. You will learn about:

- Internet technologies e.g. the world wide web, email, multimedia, encryption.
- Internet connections e.g. modem, ISDN, ASDL, broadband.
- Mobile telephone technologies e.g. SMS, WAP.
- Digital broadcasting.
- Personal digital assistants (PDAs) and organisers.
- Storage media e.g. DVD, minidisk.
- Touch screen technologies.

You will also learn about the development of the specialised hardware and software associated with the above.

When investigating the effects ICT has had on different groups or contexts, you should also consider the effects on, and consequences for, individuals of not having access to ICT.

How ICT is used in business

You will need to understand how ICT has affected the way in which all sectors of the economy do business and how in turn this affects customers. Think also about the speed with which transactions can be done, and the effect this has on business. Think about, for example:

- Customers buying from home – online shopping and banking, comparing products and services such as travel, financial products, online auctions.
- Technical services – customised databases, security.
- Call centres and customer enquiries.
- Advertising and marketing.

How ICT has affected work styles

You will need to investigate how ICT has changed work styles. For example, you could investigate:

- the places in which people work – where people work, how business practice has changed.
- people's work patterns – use of email, mobile phones, laptops.
- what ICT skills and training employees require – specialist ICT packages, new technology.
- the way people interact at work – how does ICT affect communication between people, e.g. using emails instead of talking directly to each other.
- the types of jobs available – ICT has automated many "traditional" jobs from office work to manufacturing, but has created other specialist jobs such as web site designers, software and hardware engineers.

Despite many of the possibilities that ICT could offer, the changes are often not as great as predicted by ICT specialists.

Legislation

Laws, Acts and regulations are put in place by Government to protect people from the harmful effects of ICT.

You should be aware of legislation that covers working with ICT, including:

- Data Protection Act (1998)
- Computer Misuse Act (1990)
- Copyright, Designs and Patents Act (1989)
- Health and Safety at Work Act (1974)
- Health and Safety Regulations (1992)
- Regulation of Investigatory Powers Act (2000)

You do not need to know the detail of the Acts or regulations, but you should understand the reasons for their introduction. You should understand who is affected by the legislation, what protection it offers and what uses of ICT the legislation is concerned with.

You should also be aware of EU regulations on the use of computers and the Internet Code of Practice.

You should be aware that ICT has delivered many benefits, but that it has also created other unwelcome opportunities, for example, for:

- international fraud
- the misuse of personal information
- intrusion such as "spam", chat rooms, viruses.

How ICT has affected personal communications

You will need to investigate how ICT has affected the way in which people go about their daily lives, for example:

The Internet

- People have a wide range of products and services to choose from
- They have access to businesses all over the world
- They can buy products on-line easily and have access to a range of "Internet only" special offers.

Mobile phones

- Contacting people "on the move"
- Personal security, including alerting emergency services
- The cost and ease of keeping in touch with others
- The use of WAP technology to access the Internet
- Disadvantage of mobile phone use – e.g. high tariffs, overuse, nuisance of using phones in public.

Entertainment and leisure

- The range of technologies available – e.g. DVD, CD ROM, Minidisk, MP3
- How the development of ICT is affected by the consumer's changing needs and tastes – e.g. more realistic computer games.

Education and lifelong learning

- Access opportunities for people from varied locations
- The range of learning opportunities available
- Access to up to date and comprehensive research materials.

How ICT is used in community activities

You will need to investigate how ICT is used in community activities, including:

- Cyber cafés and other public access points e.g. public libraries
- On-line discussion forums, e.g. interest and pressure groups, lobbying
- Information services, e.g. museums, libraries, finding a venue
- Public transport and travel information e.g. arranging itineraries
- Satellite positioning systems used in outdoor pursuits e.g. sailing.

ICT and people with special/particular needs

There are large numbers of people who need to use ICT which is adapted to their particular needs, in order to have improved quality of life.

You will learn how ICT can offer improved access to those with:

- sensory impairment
- physical disability
- limited mobility
- learning difficulties
- language difficulties
- multiple disabilities.

You will investigate how ICT can enable people with special/ particular needs to access and exchange information and carry out transactions, using standard technology, such as:

- Vibrate alert telephones and pagers.
- Video conferencing.
- SMS.
- Online shopping.

You will investigate what specially-adapted ICT hardware and software is available, such as:

- Incoming speech amplifiers and induction loops.
- Speech synthesisers and voice recognition systems.
- Environmental control systems.

The changes that ICT brings to this group in society mirrors changes that the industry brings to other user groups, such as schools and colleges, rural groups, and official agencies.

10.3 Assessment Requirements

You must produce:

- a presentation detailing the impact of ICT developments in the areas specified, which must be in the form of a computer slide show;
- a report describing the technologies available to access and exchange information and carry out transactions;
- a newsletter or brochure of the main purposes of legislation covering working with and using ICT;
- evidence of the research you carried out for the assignment, including your sources of information.

10.4 Assessment Criteria

The assessment criteria shown below is the generic mark scheme for this unit which breaks down the allocation of marks and outlines the evidence expected.

Further guidance can be found in the on-line *Specification Support Document*.

Task One: Presentation (16 Marks)

Candidate identifies the audience for their presentation and ensures that the presentation is appropriate to the needs of the audience (2 marks)	
A1	Identifies the audience (1 mark)
A2	Format of the presentation is appropriate for the audience (1 mark)

Candidate describes an individual or group affected by ICT systems related to the given aspect/area of society (4 marks)	
B1	Identifies one individual or group (1 mark)
B2	Describes the individual or group (1 mark)
B3	Relates the individual or group to ICT use (up to 2 marks)

Candidate considers the consequences of lack of access to ICT and the benefits available through the use of ICT to their chosen individual or group, related to the given aspect/area of society (6 marks)	
C1	Describes in detail the benefits of the use of ICT (up to 3 marks)
C2	Explains the consequences of limited or no access to ICT (up to 3 marks)

Candidate makes informed suggestions to show how ICT developments already in progress will affect their chosen individual or group in the near future (2 marks)	
D1	Provides basic details of the future effects (up to 2 marks)

Candidate's work is produced using the software features available (2 marks)	
E3	Shows use of the software features (1 mark for each, up to 2 marks)

Task Two: Report (16 Marks)

Candidate produces a basic description of two technologies available to access and exchange information and carry out transactions (4 marks)	
F1	Identifies two technologies (1 mark for each, up to 2 marks)
F2	Provides a basic description of the two technologies (1 mark for each, up to 2 marks)

Candidate produces a more detailed description that includes the main purpose and the advantages and disadvantages of their two technologies (10 marks)	
G1	States the purpose of the two technologies (1 mark for each, up to 2 marks)
G2	Explains one advantage for each technology (2 marks for each, up to 4 marks)
G3	Explains one disadvantage for each technology (2 marks for each, up to 4 marks)

Candidate produces a well-structured, well-organised report that is easy to read and understand (2 marks)	
H1	Provides a well-structured, well-organised report (up to 2 marks)

Task Three: Newsletter or Brochure on Legislation (10 Marks)

Candidate produces a simple description of the main purposes of four pieces of legislation covering working with, and using, ICT (4 marks)	
I1	Gives a simple description of the main purpose (1 mark for each, up to 4 marks)

For two of their chosen pieces of legislation, the candidate includes an explanation of the implications for users of implementing the legislation (4 marks)	
J1	Implications for users explained (2 marks for each, up to 4 marks)

Candidate produces a well-structured, well-organised newsletter or brochure that is easy to read and understand (2 marks)	
K1	Provides a well-structured, well-organised newsletter or brochure (up to 2 marks)

Additional marks that may be gained in any of the three tasks (20 Marks)	

Candidate provides details of their sources of information. At least one source to be validated and one to be evaluated (10 marks)	
L1	Includes a list of their sources of information (up to 3 marks)
L2	Includes a range of sources of different types (up to 3 marks)
L3	Validates one of their source of information (1 mark)
L4	Evaluates the same source of information validated in L3 (3 marks)

Candidate work includes evidence of the use of ICT to search for, select and organise information (4 marks)	
M1	Uses ICT to search for and select information (up to 2 marks)
M2	Uses ICT to organise information (up to 2 marks)

Candidate produces a detailed evaluation of their work for one of the three tasks (3 marks)	
N1	Provides a detailed evaluation of one of their tasks (up to 3 marks)

Candidate recognises and explores ethical and moral implications of access to ICT in one of the three tasks (3 marks)	
O1	Considers ethical and moral issues within one of the three tasks (up to 3 marks)

10.5 Essential Information for Teachers

This unit is assessed by examiners appointed by AQA through evidence in the candidate's assignment which comprises the three tasks set by AQA. Candidates are required to complete a portfolio that covers the assessment requirements of this unit. To fulfil these requirements candidates need to take part in a planned learning programme covering the knowledge, skills and understanding which are specified in the *What you need to learn* section of the unit.

Centres should ensure that sufficient time is given to the teaching of the key terms and concepts contained within the unit before embarking on the portfolio. Candidates will need to have developed a sound understanding of these terms and concepts if they are to achieve success with the portfolio. Centres are reminded that the portfolio is the mode of assessment for this unit, it is not acceptable for the portfolio to be used as a vehicle for the delivery of the unit content.

Guidance on Delivery

This unit requires candidates to investigate the ways in which the range of new ICT technologies affects our everyday lives. It requires candidates to realise that different groups and individuals have different levels of access to ICT, and some groups or individuals have no access at all, with consequent effects on their lives and they way in which they work.

The unit is externally assessed by means of an Assignment that is set and marked by the board. This Portfolio will cover all aspects of the unit and will require candidates to carry out significant amounts of research. It is important, however, that centres deliver the content of the unit in detail before candidates complete the Assignment.

Candidates initially need to learn about the range of new technologies which are available to allow us to access and exchange information. Some examples of these technologies are given in the *What you need to learn* section of the specification, but that list should not be regarded as exhaustive. Candidates must realise that new forms of technology are becoming available all the time, and they should be aware of the current situation. It is not required that candidates will have first-hand experience of all the types of technology available, but centres are expected to make examples of as many of the technologies as possible available to candidates.

Candidates are required to be aware of the opportunities created by each type of technology, and the uses to which it can be put. They are not required to have a detailed technical knowledge of the various devices.

Candidates working towards higher grades need to develop an understanding of the trends in technological development over time, and use this understanding to predict likely future developments. Most broadsheet newspapers have a regular supplement that includes articles that may help students to think about future developments. Similarly the information and archives are available on CD-ROM and the Internet.

The unit lends itself to allowing students to carry out some independent research. It may well be that a visit to an appropriate technology exhibition could be used to support this unit, as could visits to local banks and large retail establishments.

Teachers could arrange visits to places such as railway stations to see ICT in action. If this is not possible, students should be able to visit a library or a hospital where they can see how ICT is being used.

Candidates will certainly need use of the Internet for research, with more able candidates being required to make appropriate use of ICT tools such as search engines and databases in their collation of information. Centres may wish to consider the suitability of materials available on the Internet with this level of student. The issues of security of data, e.g. encryption and the use of passwords are relevant here.

Candidates are required to have an understanding of the ICT needs of a number of groups and individuals, and the ways in which these needs can be met through the use of ICT. Candidates also need to be aware that some groups or individuals have limited access to ICT or, in some cases, no access at all. They must be able to describe the consequences for those groups and individuals of the lack of access.

Candidates must be aware of the main purposes of the various pieces of legislation which cover working with ICT. They must also be aware of the implications for users and organisations of implementing that legislation. It may be that centres will wish to utilise contacts with a

range of external organisations for the delivery of this section.

It is important that candidates understand the relationship between the various pieces of legislation and the purposes of them. Candidates are not required to have a detailed working knowledge of the various pieces of legislation, but they do need to be clear about the reasons for their introduction – who is affected by the legislation and the protection it is intended to offer. A list of recent items of legislation is given in the *What you need to learn* section of the specification. Again, this is not intended to be exhaustive. Where dates are given for legislation or regulations, these indicate those that are current at the time of writing. If new legislation or regulations supersede these, the most up-to-date information should be studied.

Guidance on Assessment

The content of this Unit will be assessed in three tasks set by AQA. Examiners appointed by AQA will mark all three tasks.

There are 62 marks available in total for this Unit; these are awarded for evidence presented in the candidate's Assignment. This Assignment will be assessed externally set and marked by AQA.

When assessing a candidate's work, assessors should consider the level of attainment in three broad areas:

- independence and originality in the evidence presented for assessment;
- the depth and breadth of understanding of the content of the unit.

Centres should also be aware that the Assessment Criteria in section 8.4 of this specification are intended to be cumulative. However, it is possible for a candidate's performance in one criterion in one cell of the Assessment Criteria to be compensated by a better performance in another criterion in another cell for the same task. Assessors will be expected to use their professional judgement to arrive at the final mark for a task, based upon the standard determined by AQA.

10.6 Resources

For this unit students will require word processing software for the production of evidence, and access to the Internet to support research. Examples of new technology for personal communication, entertainment and leisure and education would also be an advantage.

All work submitted to the teacher for assessment for Unit 3 must be produced on a computer and printed in hard copy (work in other media will not be accepted), **otherwise marks cannot be awarded for the work.** However, special consideration can be requested of AQA for candidates whose work, including the ability to use a computer in its production, has been affected by illness or other exceptional circumstances.

Further information about the circumstances when special consideration may be requested is given in section 16.3, "Factors Affecting Individual Candidates", of the specification. Information about the procedure is issued separately in the document, *"Regulations and Guidance relating to Candidates with Particular Requirements"*, which can be obtained from AQA.

If a candidate is absent or for some other reason has fallen behind in computer hours, teachers should be able to accommodate such occasional absence by ensuring that the opportunity is created for them to make up any sessions missed during which work on the tasks for submission to the teacher for assessment takes place. Similarly if, for whatever reason, a candidate has difficulty producing work on a computer, it will be expected that the centre will create an opportunity to make good this work.

10.7 Key Skills Guidance

Details of opportunities for Key Skills development and assessment are provided in Section 11, 'Key Skills and Other Issues' and in Appendix D.

Key Skills and Other Issues

11 Key Skills

11.1 Introduction

The Key Skills qualifications require candidates to demonstrate levels of achievement in the Key Skills of *Application of Number, Communication* and *Information Technology*..

The units for the 'wider' Key Skills of *Improving own Learning, Working with Others* and *Problem Solving* are also available. The acquisition and demonstration of ability in these 'wider' Key Skills is deemed highly desirable for all candidates.

Copies of the Key Skills Units may be downloaded from the QCA Website (www.qca.org.uk/keyskills).

11.2 Teaching, Developing and Providing Opportunities for Generating Evidence

Opportunities for Key Skills development and assessment are indicated in Appendix D.

Key Skills links are identified in two ways: Key Skills Signposting and Keys to Attainment.

Key Skills Signposting indicates naturally occurring opportunities for the development of Key Skills during teaching, learning and assessment. Candidates will not automatically achieve the signposted Key Skill through the related vocational evidence.

Keys to Attainment, where appropriate, are identified Key Skills or aspects of Key Skills which are central to vocational achievement. If a candidate has met the indicated vocational requirements of the Unit, the specified Key to Attainment shows that the relevant aspect of the Key Skill has also been achieved. A Key to Attainment does not negate the need for candidates to develop and practise the Key Skill during teaching and learning.

12 Spiritual, Moral, Ethical, Social, Cultural and Other Issues

12.1	Spiritual, Moral, Ethical, Social and Cultural Issues	GCSE in Applied ICT (Double Award) offers a wide range of opportunities for the exploration of spiritual, moral, ethical, social and cultural issues. Further details are provided in Appendix E.
12.2	European Dimension	AQA has taken account of the 1988 Resolution of the Council of the European Community in preparing this specification and associated specimen paper. European examples should be used where appropriate in the delivery of the subject content. Relevant European legislation is identified within the specification where applicable. Further details are provided in Appendix E.
12.3	Environmental Issues	AQA has taken account of the 1988 Resolution of the Council of the European Community and the Report *"Environmental Responsibility: An Agenda for Further and Higher Education"* 1993 in preparing this specification and associated specimen papers. Further details are provided in Appendix E.
12.4	Health and Safety	This specification will encourage the development of a sense of responsibility for the health and safety of the self and others. Particular opportunities should be exploited to promote these issues.
12.5	Citizenship	This specification will assist with the development of candidates' reflection on and sense of social and moral responsibility. Opportunities will be available for the development of knowledge and understanding of responsibilities. The specification will assist with the development of the skill of enquiry and communication of topical issues. Further details are provided in Appendix E.
12.6	Avoidance of Bias	AQA has taken great care in the preparation of this specification and associated specimen paper to avoid bias of any kind.
12.7	Issues for Centres in Wales and Northern Ireland	Terms, legislation or aspects of government that are different from those in England should not disadvantage candidates in Wales or Northern Ireland. Where such situations might occur, including in the external test, the terms used have been selected as neutral, so that programmes can be developed to reflect local and regional circumstances.

Centre-Assessed Components

13 Guidance on Setting Centre Assessed Components

13.1	Portfolio Advisers	Advisors will be available to assist centres with any matters relating to portfolio Units. Details will be provided when AQA knows which centres are following the specification.

14 Supervision and Authentication

14.1	Supervision of Candidates' Work	Candidates' work for assessment must be undertaken under conditions which allow the teacher to supervise the work and enable the work to be authenticated. If it is necessary for some assessed work to be done outside the centre, sufficient work must take place under direct supervision to allow the teacher to authenticate each candidate's whole work with confidence.
14.2	Guidance by the Teacher	All internal assessors must record full details of the nature of any assistance given to individual candidates that is beyond that of the teaching group as a whole, but within the parameters laid down by this specification. This assistance must be taken into account by the internal assessors when assessing candidates' work. The work assessed must be solely that of the candidate concerned. Any assistance given to an individual candidate which is beyond that given to the group as a whole must be recorded on the Centre-assessed Candidate Record Form (see Appendix B.)
14.3	Unfair Practice	At the start of the course, the supervising teacher is responsible for informing candidates of the AQA Regulations concerning malpractice. Candidates must not take part in any unfair practice in the preparation of portfolio Unit work to be submitted for assessment, and must understand that to present material copied directly from books or other sources without acknowledgement will be regarded as deliberate deception. Centres must report suspected malpractice to AQA. The penalties for malpractice are set out in the AQA Regulations.
14.4	Authentication of Candidates' Work	Both the candidate and the teacher are required to sign declarations confirming that the work submitted for assessment is the candidate's own. The teacher declares that the work was conducted under the specified conditions, and records details of any additional assistance.

15 Standardisation

15.1 Standardising Meetings

Annual standardising meetings will usually be held in the autumn term. Centres entering candidates for the first time must send a representative to the meetings. Attendance is also mandatory in the following cases:

- where there has been a serious misinterpretation of the specification requirements;
- where the nature of portfolio Unit tasks set by a centre has been inappropriate;
- where a significant adjustment has been made to a centre's marks in the previous year's examination.

Otherwise attendance is at the discretion of centres. At these meetings support will be provided for centres in the development of appropriate portfolio Unit tasks and assessment procedures.

15.2 Internal Standardisation of Marking

The centre is required to standardise the assessment across different teachers and teaching groups and within and across Units to ensure that all work at the centre has been judged against the same standards. If two or more teachers are involved in marking Units, one teacher must be designated as responsible for internal standardisation. Common pieces of work must be marked on a trial basis and differences between assessments discussed at a training session in which all teachers involved must participate. The teacher responsible for standardising the marking must ensure that the training includes the use of reference and archive materials such as work from a previous year or examples provided by AQA. The centre is required to send to the moderator the Centre Declaration Sheet duly signed to confirm that the marking of portfolio work at the centre has been standardised. If only one teacher has undertaken the marking, that person must sign this form. A specimen Centre Declaration Sheet appears in Appendix B.

16 Administrative Procedures

16.1 Recording Assessments within each Unit

The candidates' work must be marked according to the assessment criteria. Teachers should keep records of their assessments during the course in a format which facilitates the complete and accurate submission of the final overall assessments at the end of the course on the Centre-assessed Candidate Record Forms. Specimen Centre-assessed Candidate Record Forms appear in Appendix B.

16.2 Submitting Marks and Sample Work for Moderation

For each portfolio Unit a mark for each candidate must be submitted to AQA by the date specified. Centres will be informed which portfolio Units are required to be submitted in the samples to the moderator.

16.3 Factors Affecting Individual Candidates

Teachers should be able to accommodate the occasional absence of candidates by ensuring that the opportunity is given for them to make up missed assessments.

Special consideration should be requested for candidates whose work has been affected by illness or other exceptional circumstances. Information about the procedure is issued separately.

If work is lost, AQA should be notified immediately of the date of the loss, how it occurred, and who was responsible for the loss. AQA will advise on the procedures to be followed in such cases.

Where special help, which goes beyond normal learning support is given, AQA must be informed so that such help can be taken into account when assessment and moderation take place.

Candidates who move from one centre to another during the course sometimes present a problem for a scheme of internal assessment. Possible courses of action depend on the stage at which the move takes place. If the move occurs early in the course the new centre should take responsibility for assessment. If it occurs late in the course it may be possible to accept the assessments made at the previous centre. Centres should contact AQA at the earliest possible stage for advice about appropriate arrangements in individual cases.

16.4 Retaining Evidence and Re-Using Marks

The centre must retain the work of candidates, with Centre-assessed Candidate Record Forms attached, under secure conditions, from the time it is assessed, to allow for the possibility of an enquiry about results. The work may be returned to candidates after the issue of results provided that no enquiry about results is to be made which will include re-moderation of the work in the portfolio Unit(s). If an enquiry about result is to be made, the work must remain under secure conditions until requested by AQA.

17 Moderation

17.1 Moderation Procedures

Moderation of the portfolio work is by inspection of a sample of candidates' work by a moderator appointed by AQA. The centre marks must be submitted to AQA by the specified date. The moderator will normally inspect the work by receiving the sample by post.

17.2 Post-Moderation Procedures

On publication of the GCSE (Double Award) results, the centre is supplied with details of the final marks for the portfolio Units.

The candidates' work will be returned to the centre after the examination. At the same time as the issue of results, the centre receives a report form giving feedback on the appropriateness of the task set, the accuracy of the assessments made, and the reasons for any adjustments to the marks.

Some candidate's work may be retained by AQA for archive purposes.

The Externally-Assessed Component

18 Supervision and Authentication

18.1	Supervision of Candidates' Work	Candidates' work for assessment must be undertaken under conditions which allow the teacher to supervise the work and enable the work to be authenticated.
18.2	Guidance by the Teacher	The work assessed must be solely that of the candidate concerned. Any assistance given to an individual candidate which is beyond that given to the group as a whole must be recorded on the Externally-assessed Candidate Record Form. A specimen form appears in Appendix B.
18.3	Unfair Practice	At the start of the course, the supervising teacher is responsible for informing candidates of the AQA Regulations concerning malpractice. Candidates must not take part in any unfair practice in the preparation of the work to be submitted for external assessment (the Assignment) and must understand that to present material copied directly from books or other sources without acknowledgement will be regarded as deliberate deception. Centres must report suspected malpractice to AQA. The penalties for malpractice are set out in the AQA Regulations.
18.4	Authentication of Candidates' Work	Both the candidate and the teacher are required to sign declarations confirming that the work submitted for assessment is the candidate's own. The teacher declares that the work was conducted under the specified conditions, and records details of any additional assistance. Centres will be required by AQA to supply details of the timetabling of the controlled sessions for Unit 3. This information may be used by visiting members of the JCGQ/AQA Examinations Inspectorate to check that controlled sessions are being conducted in accordance with the AQA specification and the *AQA-Assessed Unit: Instructions and Guidance for Teachers*. The Head of Centres will be obliged to make arrangements which will facilitate the work of the JCGQ/AQA Examinations Inspectorate. Further details about the supervision and authentication of work and the other circumstances under which the externally-assessed component must be carried out are given in the *AQA-Assessed Unit: Instructions and Guidance for Teachers* issued for the examination.

Awarding and Reporting

19 Grading, Shelf-Life and Re-Sits

19.1 Qualification Titles

The qualification based upon this specification has the following title:

AQA GCSE in Applied Information and Communication and Technology (Double Award).

19.2 Grading System

Individual assessment Unit results will be reported.

The qualification will be graded on a 15 point scale, A*A*, A*A, AA, AB,BB,BC,CC,CD,DD,DE,EE,EF,FF,FG and GG. Candidates who fail to reach the minimum standard for grade GG will be recorded as U (unclassified) and will not receive a qualification certificate.

19.3 Marking of Each Unit

Each internally-assessed unit contains its own set of assessment criteria, contextualised specifically to the content of that unit.

Each externally-assessed unit will have assessment criteria against which the unit will be marked.

19.4 Internally Assessed Units

A candidate's work for an **internally-assessed unit** must aim to cover the Assessment Requirements specified.

In the Assessment Criteria mark ranges are given for each criterion. When assessing a candidate's portfolio work, for each criterion teachers should first identify the range of marks within which that work falls, then use their professional judgement to decide which mark within that range best describes the depth and quality of the work. The candidate's total mark for the unit is determined by adding the marks for the different criteria.

The moderated mark for each Unit will be converted by AQA to a mark on the uniform marks scale. The range of uniform marks available for each grade is as follows.

	U	G	F	E	D	C	B	A	A*
UMS marks per Unit	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-100

19.5 Grading of each Unit

For both internally and externally-assessed units, the minimum raw mark for each grade will be recommended by an awarding committee. The boundary decisions will be reported to centres for each unit at each assessment opportunity. For both internally and externally-assessed units candidates' raw marks will be converted by AQA to uniform marks.

Uniform marks are related to grades as follows:

	U	G	F	E	D	C	B	A	A*
UMS marks per Unit	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-100

19.6 Qualification

The number of UMS achieved by the candidate for each unit is recorded and added to those for the other two units to give an overall uniform marks total. This total for the qualification is then compared to the ranges allocated to each grade.

Double award	
Grade	**UMS marks for the qualification**
A*A*	270 – 300
A*A	255 – 269
AA	240 – 254
AB	225 – 239
BB	210 – 224
BC	195 – 209
CC	180 – 194
CD	165 – 179
DD	150 – 164
DE	135 – 149
EE	120 – 134
EF	105 – 119
FF	90 – 104
FG	75 – 89
GG	60 – 74
U	0 – 59

Hence, a candidate will be awarded both an **overall qualification grade** (based on total uniform marks) and **individual unit uniform marks**.

19.7	Shelf-Life of Unit Results	The shelf-life of individual Unit results, prior to certification of the qualification, is limited only by the shelf-life of the specification.
19.8	Assessment Unit Re-Sits	Each assessment Unit may be re-sat once only. The better result will count towards the final award. Candidates may, however, re-sit the whole qualification more than once.
19.9	Minimum Requirements	Candidates do not have to achieve a grade G or better on every unit to achieve overall qualification certification. Candidates will be graded on the basis of the work submitted for the award of the qualification.
19.10	Quality Assurance	The process for both internal and external assessment (including the mechanism for the aggregation of grades) for this qualification will conform to agreed procedures of the Code of Practice. AQA is committed to the maintenance of national standards and will provide advice about, and moderate, the assessment of candidates' work in centres.

Appendices

A Grade Descriptions

The following grade descriptions indicate the level of attainment characteristic of the given grade for the GCSE in Applied ICT (Double Award). They give a general indication of the required standard at each specified grade. The descriptions should be interpreted in relation to the content and requirements of the assessment criteria outlined in the specification; they are not designed to define that content. For the GCSE (Double Award) in ICT the skills, knowledge and understanding must be applied in vocationally-related contexts and this will generally include a greater degree of involvement with ICT practice beyond the educational environment. The grade awarded will depend in practice upon the extent to which the candidate has met the assessment evidence requirements overall. Shortcomings in some aspects of the assessment may be balanced by better performances in others.

Grade A Candidates show a good knowledge and understanding of the range and scope of information processing and communication applications and of the techniques and systems, including the software and hardware sub-systems, needed to support them. They use ICT terms and definitions appropriately and are able to contrast and compare related ideas. They apply general principles of information processing to given situations and abstract general principles from given examples. They identify a range of needs and opportunities, carry out systematic analysis, and design and evaluate effective ways of using information and communication systems. They evaluate information sources, software packages and computer models, analysing the situations for which they were developed and assessing their efficiency, appropriateness and ease of use. They use complex lines of enquiry to find and select information, using a wide range of sources. They explore, develop and interpret information to carry out a range of tasks and produce effective working solutions to a range of problems, including designing and implementing systems for others to use. They show efficiency and economy in developing, testing and refining sets of instructions to automate processes and to make things happen, including responding to external events. They use and develop computer models to investigate and test hypotheses, and use ICT to share, exchange and present work, demonstrating a clear sense of audience and purpose. They discuss methods of detecting the loss or corruption of information and describe steps which can minimise the likelihood of the abuse of personal information. They reflect critically on their use of ICT and show understanding of the effects of its use in the wider world.

Grade C Candidates show some knowledge and understanding of the range and scope of information processing and communication applications and of the techniques and systems, including the software and hardware sub-systems, needed to support them. They show a good grasp of basic ICT terms and definitions and are able to contrast and compare related ideas. They identify needs and opportunities and analyse, design and evaluate appropriate ways of addressing these using information and communication systems. They use complex lines of enquiry to find and select information, using a wide range of sources, and they explore, develop and interpret information to carry out a range of tasks and produce appropriate solutions to problems. They show awareness of efficiency and economy in developing, testing and refining sets of instructions to automate processes and to make things happen, including responding to external events. They use computer models to investigate and test hypotheses, and use ICT to share, exchange and present work, demonstrating a consideration of audience and purpose. They show awareness of the need to detect the loss or corruption of information and to prevent the abuse of personal information. They reflect critically on their use of ICT and consider the effects of its use in the wider world.

Grade F Candidates show a basic knowledge of familiar, simple information processing and communication applications and of the techniques and systems needed to support them. They show knowledge of some of the basic ICT terms and definitions. They respond to needs and opportunities and evaluate ways of addressing these using information and communication systems. They understand the need for precision in framing questions when finding, selecting and collecting information. They use ICT to explore, develop and interpret information, and they develop, test and modify sets of instructions to automate processes and to make things happen. They use computer models to detect patterns and relationships and use ICT to share, exchange and present work and demonstrate how it contributes to the development of their ideas. They reflect on their use of ICT and show some knowledge of its use in the wider world.

B Record Forms

Candidate Record Forms are available on the AQA website in the Administration area. They can be assessed via the following link http://www.aqa.org.uk/admin/p_course.php

AQA
ASSESSMENT and QUALIFICATIONS ALLIANCE

Centre-assessed work
Centre Declaration Sheet
2010

Specification Title: ..... **Unit Code:** .....

Centre Name: ..... **Centre No:** | | | | | |

Authentication of candidates' work

This is to certify that marks/assessments have been given in accordance with the requirements of the specification and that every reasonable step has been taken to ensure that the work presented is that of the candidates named.

Any assistance given to candidates beyond that given to the class as a whole and beyond that described in the specification has been recorded on the *Candidate Record Form(s)* and has been taken into account. The marks/assessments given reflect accurately the unaided achievement of the candidates.

Signature(s) of teacher(s) responsible for assessment

Teacher 1 ..... **Teacher 2** .....

Teacher 3 ..... **Teacher 4** .....

Teacher 5 ..... **Teacher 6** .....

(Continue overleaf if necessary)

Internal Standardisation of Marking

Each centre must standardise the assessment across different teachers/assessors and teaching groups to ensure that all candidates at the centre have been judged against the same standards.

If two or more teachers/assessors are involved in marking/assessing, one of them must be designated as responsible for standardising the assessments of all teachers/assessors at the centre.

I confirm that [tick either (a) or (b)]:

☐ (a) the procedure described in the specification has been followed at this centre to ensure that the assessments are of the same standard for all candidates; or

☐ (b) I have marked/assessed the work of all candidates.

Signed: ..... **Date:** .....

Signature of Head of Centre ..... **Date:** .....

This form should be completed and sent to the moderator with the sample of centre-assessed work.

C Overlaps with Other Qualifications

C.1	GCSEs	There is some overlap with the AQA GCSE in Information and Communication Technology (full course and short course), however the teaching, learning and assessment styles are different.
C.2	Other GCSE (Double Award)s	The AQA GCSE in Applied Information and Communication Technology (Double Award) does have a number of items of content in common with the AQA GCSE in Applied Business (Double Award), but there is emphasis on different aspects of that content through the delivery and assessment of the respective programmes.
C.3	GNVQs	There is overlap with the AQA Full Award GNVQ at Foundation and Intermediate levels. There is some similarity in the assessment styles of some units. The GNVQ courses are partly assessed by pre-release tasks and written tests, which are not a feature of the AQA GCSE (Double Award) in Information and Communication Technology.
C.4	Relationship to National Occupational Standards	Grids showing the relationship between the subject content of this specification and national occupational standards have been published by the regulatory authority, the Qualifications and Curriculum Authority.

D Summary of Key Skills Opportunities

D.1 The grids below show key skills opportunities within each unit as either Keys to Attainment or Signposts as appropriate.

D.2 Key Skills mapping: Level 1

🔑 = Keys to Attainment

⚑ = Signposts

× = there are no obvious opportunities for the development or assessment of the key skill in the unit

Key skill	GCSE unit	Examples of opportunities for developing the key skill or for generating key skills portfolio evidence in GCSE in Applied ICT (Double Award) NB these are illustrative only	
C1.1 Take part in a **one-to-one** discussion and a **group** discussion about different straightforward subjects.	Unit 1	×	
	Unit 2	🔑	Investigating how departments in an organisation use ICT, finding out about network protocols and services, and identifying user requirements before and after designing an ICT system. Discussions might be with IT or other personnel or as part of a group investigation of an organisation.
	Unit 3	🔑	Discussions as part of a group or with individuals on what the development of new ICT has meant for individuals, communities, businesses etc.
C1.2 Read and obtain information from **two** different types of documents about straightforward subjects, including at least **one** image.	Unit 1	×	
	Unit 2	🔑	Network protocols, company reports showing the functions of different departments, case study material, textbooks, etc.
	Unit 3	🔑	Literature from technology companies e.g. brochures from mobile phone company, on-line banks, ISPs etc, newspaper supplements/articles, textbooks, etc.
C1.3 Write **two** different types of documents about straightforward subjects. Include at least one image in one of the documents.	Unit 1	×	
	Unit 2	⚑	Reporting on the information requirements of a system (which could be supported by data-flow diagrams), producing a design specification for an ICT system, describing components, reporting how an organisation uses ICT etc.
	Unit 3	🔑	Reporting on investigations of the variety of technology used to exchange information and carry out transactions, and about related hardware and software. These would readily be supported by diagrams. Reporting on how ICT has changed working styles, personal communications etc.

Key skill	GCSE unit	**Examples of opportunities for developing the key skill or for generating key skills portfolio evidence in GCSE in Applied ICT (Double Award)** NB these are illustrative only	
N1.1 Interpret straightforward information from **two** different sources. At least one source should be a table, chart, diagram or line graph.	Unit 1	×	
	Unit 2		Designing ICT systems which match user needs may involve interpreting and manipulating simple numerical data about e.g. customers and the flow of information.
	Unit 3	×	
N1.2 a Carry out straightforward calculations to do with amounts and sizes;	Unit 1		Calculating simple functions in spreadsheets e.g. SUM, AVERAGE etc.
	Unit 2	×	
	Unit 3	×	
N1.2 b Carry out straightforward calculations to do with scales and proportion;	Unit 1	×	
	Unit 2	×	
	Unit 3	×	
N1.2 c Carry out straightforward calculations to do with handling statistics.	Unit 1	×	
	Unit 2	×	
	Unit 3	×	
N1.3 Interpret the results of your calculations and present your findings. You must use **one** chart and **one** diagram.	Unit 1		Organising numerical information using spreadsheet software may involve some manipulation of data, and presentation in a variety of forms will be possible.
	Unit 2	×	
	Unit 3	×	

Key skill	GCSE unit	Examples of opportunities for developing the key skill or for generating key skills portfolio evidence in GCSE in Applied ICT (Double Award) NB these are illustrative only	
WO1.1 Confirm what needs to be done to achieve given objectives, including your responsibilities and working arrangements.	Unit 1	×	
	Unit 2		Investigating information flow and the use of ICT in an organisation, or designing an ICT system lend themselves to group activities where methods and objectives for the group are set and individual responsibilities for researching different aspects given. Could fulfil the group-working requirement for this key skill.
	Unit 3		Investigating available technologies and the effects of ICT on personal communications, working practices, communities etc as group activities, in which responsibility for researching different aspects might be given to individuals. Could fulfil the group-working requirement for this key skill.
WO1.2 Work with others towards achieving given objectives, carrying out tasks to meet your responsibilities.	Unit 1	×	
	Unit 2		Designing an ICT system requires the identification of user requirements and the development of a system that matches them. Working with the user would give an opportunity for one-to-one working. This could also feed into group working on the overall design.
	Unit 3		Individuals may be given their own responsibilities e.g. to find out about how work practices in an organisation have changed since the introduction of ICT. Carrying out individual tasks safely and effectively, asking for help and supporting other members of the team. Working in pairs could fulfil the one-to-one working requirement for this key skill.
WO1.3 Identify progress and suggest ways of improving work with others to help achieve given objectives.	Unit 1	×	
	Unit 2		If group working is planned in such a way as to allow discussion of progress, identifying e.g. ways to meet user requirements, ideas for user documentation etc, as well as problems and how they were dealt with, with a view to suggesting better ways of working together.
	Unit 3	×	

LP1.1 Confirm understanding of your short-term targets and plan how these will be met, with the person setting them.	Unit 1	×	
	Unit 2		If the group's work is planned to allow an appropriate person to set individual targets for work on designing and implementing an ICT system and also identify action points, deadlines, arrangements for reviewing progress, and who to ask for help.
	Unit 3	×	
LP1.2 Follow your plan, using support given by others to help meet targets. Improve your performance by: ▪ Studying a straightforward subject ▪ Learning through a straightforward practical activity.	Unit 1	×	
	Unit 2		If the student follows the plan for designing the system agreed in LP1.1, seeking support where necessary, and uses different approaches to learning, including a practical activity such as testing the system as it is being developed, consulting manuals or experts etc. Also acting on suggestions for improvements.
	Unit 3	×	
LP1.3 Review your progress and achievements in meeting targets, with an appropriate person.	Unit 1	×	
	Unit 2		Reviewing what has been learned and how they went about it, on a one-to-one basis e.g. in tutorials, with encouragement to identify good work and bad, with suggestions for improvements.
	Unit 3	×	

Key skill	GCSE unit	**Examples of opportunities for developing the key skill or for generating key skills portfolio evidence in GCSE in Applied ICT (Double Award)** NB these are illustrative only	
PS1.1 Confirm your understanding of the given problem with an appropriate person and identify **two** options for solving it.	Unit 1	×	
	Unit 2		With support from an appropriate person or people, confirming the nature of the task of designing an ICT system using given information and identifying possible problems e.g. that the system will not meet a certain requirement of the user. Also coming up with possible solutions, such as consulting a manual or a tutor.
	Unit 3	×	
PS1.2 Plan and try out at least **one** option for solving the problem, using advice and support given by others.	Unit 1	×	
	Unit 2		With support from an appropriate person or people, planning how the design specification might be developed such that the solution meets user requirements. Identifying tasks and resources and proceeding, tackling any problems arising during the design process and seeking advice and help as necessary. Also applies when implementing the specification and making any adjustments that become necessary.
	Unit 3	×	
PS1.3 Check if the problem has been solved by following given methods and describe the results including ways to improve your approach to problem solving.	Unit 1	×	
	Unit 2		Checking that the system meets user requirements, with reference to the specification and by testing it. Producing appropriate and useful user documentation. Also describing the different tasks in designing the system and how they were approached, as well as any problems and how they were tackled: what worked well and what didn't. Also making suggestions for avoiding those problems.
	Unit 3	×	

D.3 Key Skills mapping Level 2

 = Keys to Attainment

 = Signposts

× = there are no obvious opportunities for the development or assessment of the key skill in the unit

Key skill	GCSE unit	Examples of opportunities for developing the key skill or for generating key skills portfolio evidence in GCSE in Applied ICT (Double Award) NB these are illustrative only	
C2.1 a Contribute to a discussion about a straightforward subject.	Unit 1	×	
	Unit 2		Investigating how departments in an organisation use ICT, finding out about network protocols and services, and identifying user requirements before and after designing an ICT system. Discussions might be with IT or other personnel or as part of a group investigation of an organisation.
	Unit 3		Group discussions on what the development of new ICT has meant for individuals, communities, businesses etc.
C2.1 b Give a short talk about a straightforward subject, using an image.	Unit 1	×	
	Unit 2		Brief presentations, to the class or others on the design and implementation of an ICT system, possibly as part of its evaluation, and to check it meets user requirements.
	Unit 3		Brief presentations on different types of technology for exchanging information, on how ICT is used in business, on the misuse of ICT, on how new ICT has affected personal communication, how it is used by communities and people with particular needs etc.
C2.2 Read and summarise information from **two** extended documents about a straightforward subject. One of the documents should include at least **one** image.	Unit 1	×	
	Unit 2		Network protocols, company reports showing the functions of different departments, case study material, textbooks, etc. There must be evidence that information from such sources has been summarised in the student's work.
	Unit 3		Literature from technology companies e.g. mobile phone companies, on-line banks, ISPs etc, newspaper supplements/articles, text books, etc. There must be evidence that information from such sources has been summarised in the student's work.
N2.1 Interpret information from **two** different sources, including material containing a graph.	Unit 1	×	
	Unit 2		Designing ICT systems which match user needs will require familiarity with applications such as spreadsheets and databases and the graphical representation of numerical data. This may provide opportunities for students to interpret and manipulate such data.
	Unit 3	×	
N2.2 a Carry out calculations to do with amounts and sizes;	Unit 1	×	
	Unit 2	×	
	Unit 3	×	
N2.2 b Carry out calculations to do with scales and proportions;	Unit 1	×	
	Unit 2	×	
	Unit 3	×	

Key skill	GCSE unit	**Examples of opportunities for developing the key skill or for generating key skills portfolio evidence in GCSE in Applied ICT (Double Award)** NB these are illustrative only	
N2.2 c Carry out calculations to do with handling statistics;	Unit 1	×	
	Unit 2	×	
	Unit 3	×	
N2.2 d Carry out calculations to do with using formulae.	Unit 1	×	
	Unit 2	×	
	Unit 3	×	
N2.3 Interpret the results of your calculations and present your findings. You must use at least **one** graph, **one** chart and **one** diagram.	Unit 1		Organising numerical information using spreadsheet software may involve some manipulation of data, and presentation in a variety of forms will be possible.
	Unit 2	×	
	Unit 3	×	

WO2.1 Plan straightforward work with others, identifying objectives and clarifying responsibilities, and confirm working arrangements.	Unit 1	×	
	Unit 2		Investigating information flow and the use of ICT in an organisation, or design an ICT system as a group activity in which objectives and responsibilities for researching different aspects are allocated to individuals. Could fulfil the group-working requirement for this key skill.
	Unit 3		Investigating available technologies and the effects of ICT on personal communications, working practices, communities etc as group activities, in which responsibility for researching different aspects could be allocated to individuals. Could fulfil the group-working requirement for this key skill.
WO2.2 Work co-operatively with others towards achieving identified objectives, organising tasks to meet your responsibilities.	Unit 1	×	
	Unit 2		Designing an ICT system requires the identification of user requirements and the development of a system that matches them. Working with the user would give an opportunity for one-to-one working. This could also feed into group working on the overall design.
	Unit 3		Allocating different tasks to individuals e.g. to find out about how work practices in an organisation have changed since the introduction of ICT, which they must then progress themselves to meet the group's objectives. Seeking advice as necessary. Could fulfil the key skill requirement for one-to-one working if work in pairs, from someone who has worked for a long time in an organisation which uses ICT, a tutor etc.
WO2.3 Exchange information on progress and agree ways of improving work with others to help achieve objectives.	Unit 1	×	
	Unit 2		Planning the group's work to allow for progress checking, feedback and brainstorming e.g. on ways to meet requirements, making alterations, ideas for user documentation etc.
	Unit 3	×	

Key skill	GCSE unit	**Examples of opportunities for developing the key skill or for generating key skills portfolio evidence in GCSE in Applied ICT (Double Award)** NB these are illustrative only	
LP2.1 Help set short-term targets with an appropriate person and plan how these will be et.	Unit 1	×	
	Unit 2		Planning work on designing and implementing an ICT system in such a way as to allow opportunities for target-setting and planning, on a one-to-one basis with the student.
	Unit 3	×	
LP2.2 Take responsibility for some decisions about your learning, using your plan and support from others to help meet targets. Improve your performance by: • studying a straightforward subject; • learning through a straightforward practical activity.	Unit 1	×	
	Unit 2		If the student takes responsibility for successfully executing the plan for designing the system agreed in LP2.1, and chooses different approaches to finding out what they need to know, including a practical activity such as testing the system as it is being developed, consulting manuals or experts etc.
	Unit 3	×	
LP2.3 Review progress with an appropriate person and provide evidence of your achievements, including how you have used learning from one task to meet the demands of a new task.	Unit 1	×	
	Unit 2		Reviewing what has been learned and how they went about it, on a one-to-one basis with the student, e.g. in tutorials.
	Unit 3	×	
	Unit 1	×	
	Unit 2		Reviewing what has been learned and how they went about it, on a one-to-one basis with the student, e.g. in tutorials.
	Unit 3	×	

Key skill	GCSE unit	**Examples of opportunities for developing the key skill or for generating key skills portfolio evidence in GCSE in Applied ICT (Double Award)** NB these are illustrative only	
PS2.1 Identify a problem and come up with **two** options for solving it.	Unit 1	×	
	Unit 2		Designing an ICT system, identifying the nature of the task, and then any problems as they arise. Identifying why they are problems e.g. that the system will not meet a certain requirement of the user, coming up with solutions such as trying alternatives, consulting a manual or a tutor and choosing a way forward. Similarly, dealing with any problems arising during implementation.
	Unit 3	×	
PS2.2 Plan and try out at least one option for solving the problem, obtaining support and making changes to your plan when needed.	Unit 1	×	
	Unit 2		Producing a design specification that meets user requirements, specifies tasks and resources, and tackles any problems arising during the design process. Implementing the specification and making any adjustments that become necessary.
	Unit 3	×	
PS2.3 Check if the problem has been solved by applying given methods, describe results and explain your approach to problem solving.	Unit 1	×	
	Unit 2		Checking that the system meets user requirements, with reference to the specification, and by testing it, explaining any modifications etc. Producing user documentation which reflects modifications and how the finished system functions. Also, conclusions about the nature of any problems, what worked well and what didn't etc.
	Unit 3	×	

E

Spiritual, Moral, Ethical, Social, Cultural and Citizenship Issues Signposting

Opportunities for the exploration of Spiritual, Moral, Ethical, Social, Cultural and Citizenship Issues within each unit are indicated in the grid below.

	Citizenship	Spiritual	Moral	Ethical	Social	Cultural	European Initiatives	Environment
Unit 1								
• How different organisations access ICT introduces social issues (in terms of access/equity/use) and how it has impacted on citizenship more broadly (tenuous).	✓				✓			
• User requirements, and communication needs of those groups, and the need to provide for all groups of people – social, cultural and spiritual issues (i.e. dates such as 09/10/01 would give different dates in the UK to the USA).		✓			✓	✓		
• The use of ICT has an environmental dimension (i.e. the paperless office).								✓
• European initiatives and legal consideration must be given to web browsing, manipulating data and access/use of data; this also has an ethical and possibly moral dimension (i.e. accessing unregulated web-pages). Data must also be recognised/cited - ethical and moral issues.			✓	✓			✓	
Unit 2								
• The use of ICT by organisations introduces social and cultural issues.	✓				✓	✓		
• Why and how organisations use ICT introduces ethical, social and citizenship dimensions.					✓			✓
• Data protection in the use of ICT requires European initiatives and legislative consideration, as do the regulations governing practice. Ethical issues will come in the form of 'correct' usage of that data.				✓			✓	
• Network protocols and network services (including firewalls) introduce an ethical and moral aspect to use of systems.			✓				✓	
• The pace of change and development of technology introduces social issues (access and equity) but also environmental issues in terms of obsolescence.					✓			✓
• User requirements necessitate recognition of social, cultural and spiritual issues and potentially citizenship variables.	✓	✓			✓	✓		
• Ethical and social considerations will come in the form of manual versus technological systems.				✓	✓			

	Citizenship	Spiritual	Moral	Ethical	Social	Cultural	European Initiatives	Environment
Unit 3								
• The use of ICT by all sectors of society and how they affect everyday life introduces spiritual, social, cultural and citizenship issues.	✓	✓			✓	✓		
• Negative and positive implications of ICT introduce ethical and moral dilemmas (possible job losses) and therein social and environmental impact (of a paperless office).			✓	✓	✓			✓
• Technological developments must also recognise associated legislative frameworks – European initiatives.							✓	
• How ICT has effected work styles and personal communications and how ICT is used in community activities brings to bear citizenship issues, social issues and cultural issues factors.	✓				✓	✓		
• European initiatives /legal consideration, and ethical issues and moral issues aspects (i.e. accessing unregulated web-pages) must be acknowledged when accessing and manipulating data.			✓	✓				