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General Certificate of Secondary Education

Information and Communication Technology 3527
Specification A (Short Course)
2011

This Specification should be read in conjunction with:

- Specimen and Past Papers and Mark Schemes
- Reports on the Examination
- Teachers' Guide

SPECIFICATION

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 AQA Website, is the definitive one.

Further copies of this specification booklet are available from:

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Background Information

1 The Revised General Certificate of Secondary Education

Following a review of the National Curriculum requirements, and the establishment of the National Qualifications Framework, all the unitary awarding bodies have revised their GCSE syllabuses for examination in 2003.

1.1 Changes at GCSE

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.

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.

ICT

The national curriculum requires that students should be given opportunities to apply and develop their 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.

	Tiering	In most subjects the scheme of assessment must include question papers, targeted at two tiers of grades, i.e. A* - D and C - G. A safety net of an allowed Grade E will be provided for candidates entered for the higher tier who just fail to achieve Grade D. The questions will still be targeted at A* - D.
	Citizenship	From 2002, students in England will be required to study Citizenship as a national curriculum subject. Each GCSE specification must signpost, where appropriate, opportunities for developing citizenship knowledge, skills and understanding.
1.2	Changes to the ICT Criteria	Specifications that meet the information and communication technology requirements of the National Curriculum Order must use the title Information and Communication Technology. Greater emphasis is placed on the use of Communication Technology. The requirements for achieving success in the specification at grade F and grade C must be demonstrably sufficient to meet, for at least one of the two purposes, the criteria listed in Part B of the IT key skill specifications at levels 1 and 2.

2

Specification at a Glance

Information and Communication Technology A (Short Course)

This is one of two AQA (Short Course) specifications in this subject. There are also two GCSE (Full Course) specifications.

There are two tiers of assessment Foundation (G – C) and Higher (D – A*)

Foundation Tier
3527F
Higher Tier
3527H

GCSE Short Course 3527	
Written Paper	**40% of total marks**
Foundation Tier	1½ hours short answer questions
Higher Tier	1½ hours short and extended answer questions
	All questions will be compulsory
Coursework	
AQA-set Assignment	60% of total marks
Description of a situation where appropriate use of ICT will solve some given problems	

3 Availability of Assessment Units and Entry Details

3.1	Availability of Assessment Units	Examinations based on this Specification are available in the June examination series only.
3.2	Entry Codes	Normal entry requirements apply, but the following information should be noted. The **Subject Codes** for entry to the GCSE award are: Short Course ICT A: Foundation Tier 3527F Higher Tier 3527H
3.3	Classification Codes	Each specification is assigned to 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 2650.
3.4	Private Candidates	This specification is not available for private candidates. Private candidates should refer to Specification B.
3.5	Access Arrangements and Special Consideration	We have taken note of equality and discrimination legislation and the interests of minority groups in developing and administering this specification. We follow the guidelines in the Joint Council for Qualifications (JCQ) document: *Access Arrangements, Reasonable Adjustments and Special Consideration: General and Vocational Qualifications.* This is published on the JCQ website (**http://www.jcq.org.uk)** or you can follow the link from our website (**http://www.aqa.org.uk)**.
3.6	Language of Examinations	All assessments will be through the medium of English. Assessment materials will not be provided in Welsh or Gaeilge.

Scheme of Assessment

4 Introduction

4.1 National Criteria

This AQA GCSE Specification in Information and Communication Technology (Short Course) Specification complies with the following:

- The GCSE Subject Criteria for Information and Communication Technology;
- The GCSE, GCE and AEA Code of Practice April 2009;
- The GCSE Qualification Specific Criteria;
- The Arrangements for the Statutory Regulation of External Qualifications in England, Wales and Northern Ireland: Common Criteria.

4.2 Rationale

AQA provides centres with choice by offering two alternative short course specifications in GCSE Information and Communication Technology and in the associated Full Course qualifications. The differences between the two specifications lie primarily in the requirements for the coursework component but may also be evident in the teaching and learning approach anticipated for each specification.

The coursework for Specification A (Short Course) consists of an AQA-set Assignment.

For Specification B (Short Course), candidates are required to complete one task which is to be chosen from two themes stated in the specification. Candidates are able to make their own, free choice of task, from within these themes, which allows them to fulfil the assessment criteria.

Specification A (Short Course)

This specification encourages the investigation and study of Information and Communication Technology in a variety of contexts: home, school, recreation, community, business and industry. In these contexts, candidates are given opportunities to acquire competence, capability and critical skills through the creation, implementation, use and evaluation of a range of ICT systems. Candidates from all cultures and both genders can develop their interest in, enjoyment of, and critical reflection about information technology as an integral part of modern society.

The specification uses a range of assessment techniques to enable candidates to respond graphically and in writing through practical and investigative work. In the final assessment 60% of the marks are based on coursework which allows candidates to experience an appropriate variety of roles relevant to information and communication technology: user, designer, maker, manager and client. Assessment through coursework will also enable centres to respond positively and quickly to developments in the field of information and communication technology. The remaining 40% of the final assessment will be by a differentiated terminal examination paper testing Grades C-G and Grades A*-D.

The specification provides a course of study that will enable candidates who achieve the appropriate grades (D-G) or (A*-C) to obtain exemption from the external test and from one of the two specified purposes of the internal component from Level 1 or 2 Key Skills in Information Technology.

The GCSE (Short Course) Information and Communication Technology Specification A has been produced so that the knowledge, skills and assessment are all included within the full GCSE Information and Communication Technology Specification A.

4.3 Prior level of attainment and recommended prior learning

The GCSE specifications in Information and Communication Technology have been developed to enable students who have followed the National Curriculum ICT programme of study at Key Stage 3 to continue their studies at GCSE level.

4.4 Progression

The specification allows candidates to progress to the GCE Advanced specification in Information and Communication Technology, GNVQ Foundation or Intermediate ICT or provides a coherent, satisfying and worthwhile course of study for students who do not progress further in the subject.

5 Aims

The aims set out below describe the educational purposes of following a course in Information Technology. Some of these aims are reflected in the assessment objectives; others are not because they cannot readily be translated into measurable objectives. All are, however, aims for this Information Technology course. The aims are not listed in order of priority.

A course based on this specification should encourage candidates to:

a. choose, use and design information and communication systems to carry out a range of tasks and to solve problems, making effective use of appropriate principles and techniques;

b. develop a broad and balanced experience of the range of information and communication systems and their applications and an understanding of their capabilities and limitations.

Through these broad aims, the specification should:

- develop the competence of candidates through the use of information technology in reasoned ways to solve significant problems using appropriate principles, techniques and equipment effectively and safely;
- develop the capability of candidates through the practical use of information technology for a variety of appropriate purposes in ways which produce effective responses to identified needs and opportunities in the whole curriculum;
- develop the knowledge, concepts and skills which will enable candidates to develop a broad and balanced view on a range of information systems and their applications, an understanding of their capabilities and limitations and an ability to evaluate them critically;
- develop the abilities of candidates, through the appropriate knowledge and concepts, to comment and reflect on the significant legal, political, social, environmental, economic and aesthetic applications, implications and effects of information technology;
- encourage precise and accurate communication skills in a variety of media.

6 Assessment Objectives

6.1 Assessment Objectives

A GCSE (Short Course) specification must require candidates to demonstrate their ability to:

a. apply their knowledge, skills and understanding of ICT to a range of situations;

b. analyse, design, implement and test information and communication systems and develop understanding of the wider applications and effects of ICT;

c. reflect critically on the way they and others use ICT;

d. consider the impact of ICT applications in the wider world;

e. consider the social, economic, political, legal, ethical and moral issues and security needs for data which surround the increasing use of ICT.

6.2 Quality of Written Communication

Candidates will not be required to be assessed on the quality of written communication in this specification.

7 Scheme of Assessment

7.1 Assessment Units

The Scheme of Assessment comprises two components.

Written Paper	1½hours
40% of the marks	

Foundation Tier	1½ hours short answer questions
Higher Tier	1½ hours short and extended answer questions

Coursework	
AQA-set Assignment	
60% of the marks	100 marks

Description of a situation where appropriate use of ICT will solve some given problems

7.2 Weighting of Assessment Objectives

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

Assessment Objectives	**Component Weightings (%)**		**Overall Weighting of AOs (%)**
	Written Paper	**Coursework**	
a & b	10-20	50-60	60-80
c, d & e	20-30	0-10	20-40
Overall Weighting of Units (%)	40	60	100

Candidates' marks for each assessment unit are scaled to achieve the correct weightings.

Subject Content

8 Summary of Subject Content

8.1 Introduction

The Subject Content of this specification covers the Programme of Study for Key Stage 4 of the National Curriculum Order for Information and Communication Technology (ICT), and subsumes the Programmes of Study for Key Stages 1 to 3. The subject content meets the requirements of the National Criteria for GCSE ICT.

Section A

Tools, techniques and systems

The general structure of information systems

The difference between information and data

Hardware components

Input peripherals

Output peripherals

Storage devices and media

Data transfer

Applications software

The function of applications software within the system

The types of applications software used

Database management

Spreadsheets

Charts

Word processing

Desk top publishing

Drawing

Graphics

Web design

Modelling

Evaluation of major hardware and software components of systems

Development of applications software

Gathering data

When, where and why different methods of data capture are used

Data logging

Data validation

	Storing data
	Data structures
	Security of data
	Processing data
	Searching and matching
	Sorting files
	Merging files
	Control
	Presenting information
	Modelling and simulation
Section B	**Information systems in society**
	Communications
	The Data Protection Act
	Data misuse
	Growth of information and its effects on society
	Health and safety

9 Subject Content

Candidates will be expected to have studied the content of all sections in the context of a range of suitable applications and must be able to use their knowledge to solve problems by suggesting and justifying an appropriate information technology solution.

Section A – Tools, Techniques and Systems

9.1	The general structure of information systems	Understand that information systems may be described in terms of inputs, storage, processing and outputs and understand how data flows through a system in these terms.
	The difference between Information and data	Understand that data are the raw values input into, stored and processed by information systems and that information is produced together with a context, which adds meaning.
9.2	Hardware components	Understand what a range of hardware is capable of and its usefulness in an information system. Details of operation are not required.
	Input peripherals	Input peripherals expected are: • Keyboard, including specialised keyboards • Mouse, touch pad, tracker ball, joystick • Graphics digitiser • Touch sensitive screen • Light pen • Scanner, digital camera for photographs or video • Microphone
	Output peripherals	Output peripherals expected are: • Screen (VDU) • Printers (dot-matrix, laser, ink-jet) • Plotters • Speakers

	Storage devices and media	Storage devices and media expected are: • ROM, RAM • Hard and floppy disks • Magnetic tape • CD-ROM, CD-Recordable (CD-R), CD-Rewriteable (CD-RW) • DVD-ROM, DVD-RAM, DVD-Recordable (DVD-R), DVD-Rewriteable (DVD-RW) • Flash memory • Know the difference between them in terms of their uses.
9.3	Data Transfer	Know that transfer of data files in graphics, text, sound or numeric format is possible between applications, packages and machines. Know that the use of standard file formats makes such transfer easier. (Details of file formats are not required).
9.4	Applications software	
	The function of applications software within the system	Know that applications software is designed to carry out user-related tasks.
	The types of applications software used	Know when software is suitable for a given task and understand the purpose of, and have experienced the use of, software covering the facilities and the techniques detailed below. *Note: It is the facilities and processes given that are important and not the individual nature of any of the packages in particular. It is appreciated that some packages may demonstrate the facilities and processes listed in more than one section.*
	Database Management	Understand the concepts of files, records and fields including the terminology tables, rows and columns. Software used should allow: • the insertion and deletion of fields • the insertion and deletion of records • tables to be linked together • the editing of information with records • the validation of data on entry • a simple search on one criterion only • a complex search on two or more criteria • the control of content of reports by selection of fields • the control of the format of reports.

Spreadsheets	Software used should allow : • text, numbers and formulae to be entered into cells • the insertion and deletion of columns and rows • formatting of cells • editing of entries within cells • replication of cells • the solution of "what if…" problems
Charts	Software used should allow: • the construction of bar-charts, pie-charts and scatter graphs from tables of data • labels and axes, legends and headings • numbers scales on the axes to be edited
Word processing	Software used should allow: • the movement, copying and deletion of blocks of text • the alteration of margins and spacing • the use of tabulation • left, right, centred and full justification
Desk top publishing	Software used should allow: • text and graphics to be imported • text and graphics to be positioned on the page • text to be formatted, including, changes in font type, style, and size

	Drawing	Software used should allow: • freehand drawing • use of pre-defined shapes • use of colour • addition of text • colour fills • textured effects • rotation of shapes
	Graphics	Software used should allow: • the use of brushes • sections of the picture to be moved or copied, reflected and scaled • images to be imported • addition of text
	Web design	Software used should allow: • text and pictures to be imported; • the use of table to position text and graphics; • hyperlinks to be created from text and graphics; • hot spots to be placed over parts of pictures.
	Modelling	Software used should allow: an investigation involving changing variables. Examples of packages are: • a spreadsheet for financial modelling; • a city planning and development program; • a simple flight simulator.
9.5	Evaluation of major hardware and software components of systems	Explain why particular hardware and software is appropriate for a particular task.

9.6	Gathering data	
	When, where and why different methods of data capture are used	Understand the use of questionnaires, data capture forms, data logging, feedback, OMR, OCR
	Data logging	Know there is a range of sensors, which can be used to collect data. Show awareness that sensors can be calibrated to a known scale before use. Understand that data can be collected over long or short periods and that the logging interval can also be long or short. Know that data can be collected over short distances or over long distances. Understand that the data collected is stored and can be processed at a later stage.
	Data validation	Know the reason for data validation Know the following validation checks; range check, presence check and where they would be used
9.7	Storing data	
	Data structures	Understand the concept of a database as a collection of stored data organised into files or data tables. Understand the nature and purpose of key fields. Understand that data can be extracted from a database to produce many different reports.
9.8	Security of data	Understand the physical precautions needed to protect media including protection from heat, magnetic fields, and water. Understand the need to restrict physical access to terminals and buildings. Understand the use of passwords to prevent unauthorised access to data
9.9	Processing data	
	Searching and matching	Understand the nature of the logical operators AND, OR and NOT as used in construction of database queries and filters.
	Sorting files	Know that the order of records depends on which order fields are chosen for sorting. Understand the importance of sorting a transaction file before merging with a master file.

	Merging files	Understand that merging can be simple such as appending one file onto another provided that both contain the same set of fields.
	Control	Understand that data acquired from sensors can be used to control devices and appreciate the importance of feedback in such systems. Write or interpret simple control programs from a given instruction set *e.g. Logo*
9.10	Presenting information	Know that information can be presented on screen, as hard copy and in multi-media presentations and understand the need to be able to select an appropriate presentation for a given application and audience. Understand that such presentations can include sound, text, pictures, graphs and charts.
9.11	Modelling and simulation	Understand that a computer model is based on rules and that accuracy of the results produced is dependent on the extent to which the rules are true. Show awareness of the use of spreadsheets for financial modelling. Understand that realistic simulators such as flight simulators and virtual reality software also rely on rules built into the controlling software. *Candidates will be expected to have had practical experience of the use of modelling software.*

Section B – Information Systems in Society

9.12	Communications	Understand that data can be transmitted rapidly on a global basis. Show awareness of the existence of global networks such as the Internet and of the opportunities and problems presented by the use of such networks. Understand the use of web pages and search engines.
9.13	The Data Protection Act	Know the provisions of the 1998 Data Protection Act. Know that there is a requirement to register. Know the responsibilities of data users. Know the rights of data subjects. Know what are the full and partial exemptions to the act and their effects.
9.14	Data misuse	Understand why electronically stored personal information is potentially easier to misuse than that kept in conventional form. Understand the effects of inaccurate data in files of personal information.
9.15	Growth of information and its effects on society	Describe the use of information technology, and compare it with other methods. Understand that personal information which is of interest to individuals and their families, may be held on computer. Understand the impact of information technology on the lives of members of the community. Discuss the environmental, ethical, moral and social issues raised by information technology.
9.16	Health and safety	Know that using a computer for a long time can affect people's health. Know what steps can be taken to help alleviate stress, eye strain, or wrist, back and neck problems, when using a computer for long periods.

Key Skills and Other Issues

10 Key Skills – Teaching, Developing and Providing Opportunities for Generating Evidence

10.1 Introduction

The Key Skills Qualification requires 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 and Performance, 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, but they do not form part of the Key Skills Qualification.

Copies of the Key Skills Units may be down loaded from the QCA web site (www.qca.org.uk/keyskills).

The units for each Key Skill comprise three sections:

A What you need to know.

B What you must do.

C Guidance.

Candidates following a course of study based on this specification for Information and Communication Technology (Short Course) can be offered opportunities to develop and generate evidence of attainment in aspects of the Key Skills of *Communication, Application of Number, Information Technology, Improving own Learning and Performance, Working with Others and Problem-Solving*. Areas of study and learning that can be used to encourage the acquisition and use of Key Skills, and to provide opportunities to generate evidence for Part B of the units, are signposted below.

Exemption for the Key Skills Qualification

GCSE (Short Course) ICT and Information Technology

A* - C performance provides exemption from the external test in the Key Skill of IT at level 2 and also from one of the two specified purposes of the internal Key Skill component at level 2.

D - G performance provides exemption from the external test in the Key Skill of IT at level 1 and also from one of the two specified purposes of the internal Key Skill component at level 1.

10.2 Key Skills Opportunities in ICT Specification A (Short Course)

Communication Level 1

What you must do …	Signposting of Opportunities for Generating Evidence in Subject Content		
	Section A	Section B	Assignment
C1.1 Take part in discussions	✓	✓	
C1.2 Read and obtain information	✓	✓	✓
C1.3 Write different types of documents	✓	✓	✓

Communication Level 2

What you must do …	Signposting of Opportunities for Generating Evidence in Subject Content		
	Section A	Section B	Assignment
C2.1a Contribute to discussions	✓	✓	
C2.1b Give a short talk	✓	✓	
C2.2 Read and summarise information	✓	✓	✓
C2.3 Write different types of documents	✓	✓	✓

Application of Number Level 1

What you must do …	Signposting of Opportunities for Generating Evidence in Subject Content		
	Section A	Section B	Assignment
N1.1 Interpret information from different sources	✓		✓
N1.2 Carry out calculations	✓		✓
N1.3 Interpret results and present findings	✓		✓

Application of Number Level 2

What you must do …	Signposting of Opportunities for Generating Evidence in Subject Content		
	Section A	Section B	Assignment
N2.1 Interpret information from different sources	✓		✓
N2.2 Carry out calculations	✓		✓
N2.3 Interpret results and present findings	✓		✓

Information Technology Level 1

What you must do …	Signposting of Opportunities for Generating Evidence in Subject Content		
	Section A	**Section B**	**Assignment**
IT1.1 Find, explore and develop information	✓	✓	✓
IT1.2 Present information, including text, numbers and images	✓	✓	✓

Information Technology Level 2

What you must do …	Signposting of Opportunities for Generating Evidence in Subject Content		
	Section A	**Section B**	**Assignment**
IT2.1 Search for and select information	✓	✓	✓
IT2.2 Explore and develop information and derive new information	✓	✓	✓
IT2.3 Present combined information, including text, numbers and images	✓	✓	✓

Improving own Learning and Performance Level 1

What you must do …	Signposting of Opportunities for Generating Evidence in Subject Content		
	Section A	**Section B**	**Assignment**
LP1.1 Confirm short-term targets and plan how these will be met	✓	✓	
LP1.2 Follow plan to meet targets and improve performance	✓	✓	
LP1.3 Review progress and achievements	✓	✓	

Improving Own Learning and Performance Level 2

What you must do …	Signposting of Opportunities for Generating Evidence in Subject Content		
	Section A	**Section B**	**Assignment**
LP2.1 Help set short-term targets and plan how these will be met	✓	✓	
LP2.2 Use plan and support from others, to meet targets	✓	✓	
LP2.3 Review progress and identify evidence of achievements	✓	✓	

Problem Solving Level 1

What you must do …	Signposting of Opportunities for Generating Evidence in Subject Content		
	Section A	**Section B**	**Assignment**
PS1.1 Confirm understanding of given problems	✓		✓
PS1.2 Plan and try out ways of solving problems	✓		✓
PS1.3 Check if problems have been solved and describe the results	✓		✓

Problem Solving Level 2

What you must do …	Signposting of Opportunities for Generating Evidence in Subject Content		
	Section A	**Section B**	**Assignment**
PS2.1 Identify problems and come up with ways of solving them	✓		✓
PS2.2 Plan and try out options	✓		✓
PS2.3 Apply given methods to check if problems have been solved and describe the results	✓		✓

Working with Others Level 1

What you must do …	Signposting of Opportunities for Generating Evidence in Subject Content		
	Section A	**Section B**	**Assignment**
WO1.1 Confirm what needs to be done and who is to do it	✓		
WO1.2 Work towards agreed objectives	✓		
WO1.3 Identify progress and suggest improvements	✓		

Working with Others Level 2

What you must do …	Signposting of Opportunities for Generating Evidence in Subject Content		
	Section A	**Section B**	**Assignment**
WO2.1 Plan work and confirm working arrangements	✓		
WO2.2 Work cooperatively towards achieving identified objectives	✓		
WO2.3 Exchange information on progress and agree ways of improving work with others	✓		

10.3 Further Guidance

More specific guidance and examples of tasks that can provide evidence of single Key Skills, or composite tasks that can provide evidence of more than one Key Skill are given in the AQA specification support material, particularly the Teachers' Guide.

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

11.1	Spiritual, Moral, Ethical, Social, Cultural and Other Issues	The study of Information and Communication Technology can contribute to candidates' understanding of spiritual, moral, ethical, social and cultural issues. The specification provides opportunities for candidates to explore a wide range of these issues through their study of the Subject Content. Social impacts and moral and ethical issues can be found specifically in Section B. (See page 21)
11.2	European Dimension	AQA has taken account of the 1988 Resolution of the Council of the European Community in preparing this specification and associated specimen papers.
11.3	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.
11.4	Citizenship	Questions of social and moral responsibilities are clearly relevant to issues involving information and communication technology. In addition, candidates may develop their knowledge and understanding of rights, responsibilities and the roles of voluntary and statutory bodies.
11.5	Avoidance of Bias	AQA has taken great care in the preparation of this specification and associated specimen papers to avoid bias of any kind.
11.6	Health and Safety	Issues of health and safety will occur naturally within the specification. Candidates should be aware of issues affecting the safe use of equipment when dealing with hardware, interfaces and networks and, more specifically, in the safe use of equipment when undertaking coursework tasks.

Centre-Assessed Component

12 Nature of the Centre-Assessed Component

12.1 Introduction

The coursework will comprise 60% of the examination and will consist of an AQA-set Assignment.

The AQA-set Assignment can be ordered by centres at the start of the course. An order form will be provided to centres before the course commences. It is, therefore, of the utmost importance that centres notify AQA at the earliest opportunity of their intention to enter candidates.

12.2 Nature of the assignment

The AQA-set Assignment will consist of a Candidate Booklet providing the description of a situation where the appropriate use of information technology will solve some problems to be identified. The candidate is required to produce a report that will demonstrate his/her ability to identify requirements, and make appropriate use of information technology in providing solutions which he/she will design, implement, test and evaluate.

Confidential Instructions

The centre will be provided with a set of Confidential Instructions that provide guidance on the identification of the tasks, the marking of the tasks and general solutions. A resource disk and/or CD-ROM will be provided with the appropriate data files for the particular assignment along with the necessary Record Cards.

Mark Scheme

The centre will mark the work using a mark scheme that will be provided as part of the confidential instructions. Marks will be awarded for analysis, design, implementation, testing, and evaluation. The balance of marks in these sections may vary slightly from year to year. At least 60% of the assignment mark will be awarded for design and implementation.

Work to be produced

In this individual assignment, candidates will be expected to study the material supplied and produce work that will demonstrate their ability to:

- analyse a situation and decide on the tasks which will need to be completed
- specify the outputs required
- consider and describe alternative ways of solving problems
- choose the best solution with regard to the requirements of the user and other factors which will be present in the material
- develop success criteria for the solution to each task identified
- develop performance criteria for the whole solution
- design solutions and select the best for the purpose of the assignment
- design testing plans for the solution
- review, and possibly improve, the analysis in the light of the experience gained during the design process
- choose and justify the choice of appropriate information systems, software tools and hardware to address the task
- produce an implementation of the tasks identified
- annotate the implementation sufficiently well to allow the work to be judged against the marking criteria
- test the solution according to the designed testing plan
- modify any of the previous stages as a result of this testing
- evaluate the effectiveness of the solution as a whole and of the tasks identified against the performance criteria and success criteria

Evidence

The work must provide evidence in such a form that it can be judged against the criteria given in the marking scheme.

The evidence which makes up the account may take a variety of forms: initial sketches and drawings, written explanation and commentary, hard copy, etc. Computer disks must **not** be submitted.

Role of the teacher

The teacher will need to review regularly the progress of the assignment with the candidate to ensure that all the assessment objectives for the assignment are met. The teacher's role in the consultative process is to ensure that the form and content of the assignment meet the syllabus requirements. It is not the role of the teacher to comment on matters of detail, to correct, to assist with the solution, or to set agendas of questions for the candidates to follow.

The work must clearly be that of the individual candidate. Group assignments are not permissible.

13 Guidance on Setting the Centre-Assessed Component

13.1	AQA-set Assignment	The AQA-set Assignment will be provided by AQA at the start of the two year course. Centres will be sent an order form prior to the commencement of the course that should be completed and returned to the Publications Department. Centres will be provided with sufficient Candidates Booklets on the basis of one per candidate, two copies of the Confidential Instructions and a data disk(s) and/or CD-ROM containing the necessary files to be used.
13.2	Coursework Advisers	Coursework Advisers will be available to assist centres with any matters relating to coursework. Details will be provided when AQA knows which centres are following the specification.

14 Assessment Criteria

14.1 Introduction

The coursework consists of an AQA-set assignment (60%). The assignment is assessed out of a mark of 100.

The weighting of the criteria for the assignment may change from year to year depending on the nature of the assignment. However, the criteria descriptions are standard. The criteria for the assignment are given below.

14.2 Criteria

It is necessary to provide a structure for the assessment of coursework so that all teachers are, in general, following a common procedure. Such a procedure will assist with the standardisation of assessment from centre to centre. In assessing candidates, centres must ensure that comparable standards are observed between different teaching groups. Each centre must produce a single order of merit for the centre as a whole for each component.

14.3 Criteria for marking the Assignment

This is an example and may be modified slightly to reflect the nature of the actual assignment set.

Analysis (10 marks)

Marks	
9-10	Identified the problem and stated the form the output will take, all of the information to be output and all of the data needed to produce the output. Listed all desired outcomes/performance criteria.
7-8	Identified the problem and stated the form the output will take, most of the information to be output and majority of the data needed to produce the output. Listed most desired outcomes/performance criteria.
5-6	Identified the problem and stated a form the output will take, some of the information to be output and some of the data needed to produce the output. Listed some desired outcomes/performance criteria.
3-4	Identified the problem and listed a few aspects of the problem. Listed very few desired outcomes/performance criteria.
1-2	Listed only a few aspects of the problem.
0	Analysis not tackled.

Design (25 marks)

Marks	
21-25	Developed a good planned design, appropriate to the needs of the user, showing how the problem is to be solved. Explained in detail the design choices made, showing how the design meets the needs of the user. Produced a clear justification of the software to be used. The justification is focused on the requirements of the solution.
16-20	Developed a planned design, with some consideration of the needs of the user, showing how the problem is to be solved. Explained the design choices made. Produced a description of the reason why the software to be used is suitable. Most of the description directly relates to the requirements of the solution.
11-15	Developed a design showing how the problem is to be solved. Some explanation of the choices made is given. Produced a list of the features of the software that make it suitable to use in solving the problem. Some of the list directly relates to the requirements of the solution.
6-10	Produced a limited design, with an attempt to show how the problem is to be solved. Produced a limited list of the features of the software that make it suitable to use in solving the problem.
1-5	Produced a limited design, with a limited attempt to show how the problem is to be solved.
0	Design not tackled.

Implementation (45 marks)

Marks	
37-45	Used the resources and techniques with a good level of skill, understanding and efficiency. Produced all, or nearly all, of the evidence of the solution including earlier versions. Implemented all, or nearly all, changes resulting from required testing or judgement. Work is effectively annotated.
28-36	Used the resources and techniques with good skill, some understanding and reasonable efficiency. Produced most of the evidence of the solution including earlier versions. Implemented a number of changes resulting from required testing or judgement. Work is mostly annotated.
19-27	Used the resources and techniques with some skill and some understanding. Produced some evidence of the solution, including earlier versions. Implemented a few changes resulting from required testing or judgement. Some annotation is present.
10-18	Used the resources and techniques with limited skill and limited understanding. Produced limited evidence of the solution, including, at least, one earlier version. Limited annotation is present.
1-9	Used the resources and techniques with very limited skill and very limited understanding. Produced very limited evidence of a solution.
0	Implementation not tackled.

Testing (10 marks)

Marks	
9-10	Identified whether testing is needed or not. A complete or nearly complete testing plan is designed. Identified all or nearly all data used to check the problem. Identified all or nearly all expected results. Tested against the testing plan producing a comprehensive record of results. Described changes needed (if any).
7-8	Identified whether testing is needed or not. A reasonable testing plan is designed. Identified some data used to check the problem. Identified some expected results. Tested against the testing plan in most cases producing a record of results. Described most changes needed (if any).
5-6	Identified whether testing is needed or not. A limited testing plan is designed. Identified a limited amount of data used to check the problem. Identified limited expected results. Attempted to test against the testing plan producing a record of some results. Described some changes needed (if any).
3-4	Identified whether testing is needed or not. Made a limited attempt to test.
1-2	Identified whether testing is needed or not. Made a very limited attempt to test.
0	Testing not tackled.

Evaluation (10 marks)

Marks	
9-10	Presented an evaluation clearly discussing the effectiveness of the solution with complete reference to the desired outcomes/performance criteria.
7-8	Presented an evaluation describing the effectiveness of the solution with reasonable reference to the desired outcomes/performance criteria.
5-6	Presented an evaluation making some reference to the desired outcomes/performance criteria.
3-4	Presented a limited evaluation making limited reference to the desired outcomes/performance criteria.
1-2	Listed methods used.
0	Evaluation not tackled.

14.4 Evidence to Support the Award of Marks

Teachers should keep records of their assessments during the course, in a form which facilities the complete and accurate submission of the final assessments at the end of the course.

When the assessments are complete, the marks awarded under each of the assessment criteria must be entered on the Candidate Record Form, with supporting information given in the spaces provided. A specimen Candidate Record Form appears in Appendix B; the exact design may be modified before the operational version is issued and the correct year's Candidate Record Forms should always be used.

14.5 Annotation and Supporting evidence

Centres are required to annotate coursework "to show clearly how the marks have been awarded in relation to the marking criteria defined in the syllabus" (GCSE, GCE and AEA Code of Practice April 2009). This enables the moderator to check the centre's assessments against the Assessment Criteria.

Annotation should, therefore:

- describe in all necessary detail practical work which is not available, together with comments from the teacher;
- explain where candidates have received help beyond the normal learning support which has influenced the assessments;
- highlight those key areas which have led to the recognition of a particular mark. Reference to the Assessment Criteria is particularly helpful;
- include any other notes which will help the moderator to appreciate the reasons for the assessment given.

15 Supervision and Authentication

15.1	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.
15.2	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 Candidate Record Form.
15.3	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 coursework 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.
15.4	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.

16 Standardisation

16.1 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 coursework 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.

After the first year, attendance is at the discretion of centres. At these meetings support will be provided for centres in the development of appropriate coursework tasks and assessment procedures.

16.2 Internal Standardisation of Marking

The centre is required to standardise the assessments across different teachers and teaching groups to ensure that all candidates at the centre have been judged against the same standards. If two or more teachers are involved in marking a component, 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 centre-assessed 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.

17 Administrative Procedures

17.1 Recording Assessments

The candidates' work must be marked according to the assessment criteria set out in section 14.3. The marks and supporting information must be recorded in accordance with the instructions in Sections 14.4 and 14.5. The completed Candidate Record Form for each candidate must be attached to the work and made available to AQA on request.

17.2 Submitting Marks and Sample Work for Moderation

The total component mark for each candidate must be submitted to AQA on the mark sheets provided or by Electronic Data Interchange (EDI) by the specified date. Centres will be informed which candidates' work is required in the samples to be submitted to the moderator.

17.3 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.

17.4 Retaining Evidence and Re–Using Marks

The centre must retain the work of all candidates, with Candidate Record Form attached, under secure conditions, from the time it is assessed, to allow for the possibility of an enquiry upon results. The work may be returned to candidates after the issue of results provided that no enquiry upon result is to be made which will include re-moderation of the coursework component. If an enquiry upon results is to be made, the work must remain under secure conditions until requested by AQA.

It is not possible to carry forward the mark for the assignment.

18 Moderation

18.1 Moderation Procedures

Moderation of the coursework is by inspection of a sample of candidates' work, sent by post from the centre to a moderator appointed by AQA. The centre marks must be submitted to AQA and the sample of work must reach the moderator by the specified date in the year in which the qualification is awarded.

Following the re-marking of the sample work, the moderator's marks are compared with the centre marks to determine whether any adjustment is needed in order to bring the centre's assessments into line with standards generally. In some cases it may be necessary for the moderator to call for the work of other candidates. In order to meet this possible request, centres must have available the coursework and Candidate Record Form of every candidate entered for the examination and be prepared to submit it on demand. Mark adjustments will normally preserve the centre's order of merit, but where major discrepancies are found, AQA reserves the right to alter the order or merit.

18.2 Post-Moderation Procedures

On publication of the GCSE results, the centre is supplied with details of the final marks for the coursework component.

The candidates' work is returned to the centre after the examination with a report form from the moderator giving feedback to the centre on the appropriateness of the tasks set, the accuracy of the assessments made, and the reasons for any adjustments to the marks.

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

Awarding and Reporting

19 Grading, Shelf-Life and Re-Sits

19.1	Qualification Titles	The qualification based on this specification has the following title: AQA GCSE in Information and Communication Technology (Short Course).
19.2	Grading System	Candidates must be entered for either the Foundation Tier or Higher Tier. For candidates entered for the Foundation Tier, grades C–G are available. For candidates entered for the Higher Tier A*-D are available. There is a safety net for candidates entered for the Higher Tier, where an allowed Grade E will be awarded where candidates just fail to achieve Grade D. Candidates who fail to achieve a Grade E on the Higher Tier or Grade G on the Foundation Tier will be reported as unclassified.
19.3	Re-Sits	Individual components may not be retaken, but candidates may retake the whole qualification more than once.
19.4	Minimum Requirements	Candidates will be graded on the basis of work submitted for assessment.
19.5	Carrying Forward of Centre-Assessed Marks	Candidates repeating the examination may **not** carry forward the moderated coursework mark for the assignment.
19.6	Awarding and Reporting	This specification complies with the grading, awarding and certification requirements of the GCSE, GCE and AEA Code of Practice April 2009 and will be revised in the light of any subsequent changes for future years.

Appendices

A Grade Descriptions

The following grade descriptors indicate the level of attainment characteristic of the given grade at GCSE. They give a general indication of the required learning outcomes at each specific grade. The descriptors should be interpreted in relation to the content outlined in the specification; they are not designed to define that content.

The grade awarded will depend in practice upon the extent to which the candidate has met the assessment objectives (as in section 6) overall. Shortcomings in some aspects of the examination 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
- use ICT terms and definitions appropriately and are able to contrast and compare related ideas
- apply general principles of information processing to given situations and abstract general principles from given examples
- identify a range of needs and opportunities, carry out systematic analysis, and design and evaluate effective ways of using information and communication systems
- 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
- use complex lines of enquiry to find and select information, using a wide range of sources
- 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
- 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

- use and develop computer models to investigate and test hypotheses
- use ICT to share, exchange and present work, demonstrating a clear sense of audience and purpose
- discuss methods of detecting the loss or corruption of information and describe steps which can minimise the likelihood of the abuse of personal information
- 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
- show a good understanding of basic ICT terms and definitions and are able to contrast and compare related ideas
- identify needs and opportunities and analyse, design and evaluate appropriate ways of addressing these using information and communication systems
- use complex lines of enquiry to find and select information, from a wide range of sources
- explore, develop and interpret information to carry out a range of tasks and produce appropriate solutions to problems
- 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
- use computer models to investigate and test hypotheses
- use ICT to share, exchange and present work, demonstrating a consideration of audience and purpose
- show awareness of the need to detect the loss or corruption of information and to prevent the abuse of personal information
- 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
- show knowledge of some basic ICT terms and definitions
- respond to needs and opportunities and evaluate ways of addressing these using information and communication systems
- understand the need for precision in framing questions when finding, selecting and collecting information
- use ICT to explore, develop and interpret information
- develop, test and modify sets of instructions to automate processes and to make things happen
- use computer models to detect patterns and relationships
- use ICT to share, exchange and present work and demonstrate how it contributes to the development of their ideas
- 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
2011

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

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

Authentication

This is to certify that marks have been awarded 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 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 assessments for this unit across different teachers and teaching groups to ensure that all candidates in the centre have been judged against the same standards. If two or more teachers are involved in marking a unit, one of them must be designated as responsible for standardising the marking of all teachers at the centre who mark the unit.

The following declaration must be signed by the teacher responsible for ensuring standardisation. If all the work has been marked by the same person, that person should sign below.

I confirm that:

(a) *I have marked the work of all candidates for this component;
(b) *the procedure described in the specification has been followed at this centre to ensure that the marking is of the same standard for 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

Applied Information and Communication Technology GCSE (Double Award)

There is some overlap with GCSE Applied ICT (double award), however the teaching, learning and assessment styles are different.

The units available are as follows. Details of the assessment requirements are given in each unit. Units 1 and 2 are internally assessed by portfolio and Unit 3 is assessed by an externally set and marked assignment.

Unit 1 ICT Tools and Applications

Unit 2 ICT in Organisations

Unit 3 ICT and Society

GNVQ

A list of titles of the AQA compulsory and optional units for the Foundation and Intermediate GNVQ is given below. There are links between the GCSE ICT specification and several of these units. Further details are given in the AQA support material.

Foundation GNVQ

The Units available are as follows. Details of the assessment requirements are given in each unit. The titles in bold and asterisked are Units externally assessed by a written test. For the award of a Foundation GNVQ, a candidate must complete six units:

- four compulsory vocational units in this specification
- two selected optional vocational units.

Compulsory Units

Unit 1 Presenting Information

Unit 2 Handling Information

Unit 3 Hardware and Software *

Unit 4 Graphics *

Optional Units

Unit 5 Design Project

Unit 6 Using Information Resources

Unit 7 Multimedia

Unit 8 Preparing for Employment

Unit 9 Working as Part of a Team

Intermediate GNVQ

The units available are as follows. Details of the assessment requirements are given in each unit.

The titles in bold and asterisked are Units externally assessed by a written test.

For the award of a Intermediate GNVQ, a candidate must complete six units:

- three compulsory vocational units in this specification
- three selected optional vocational units. Candidates must select either unit 6 and/or unit 9 to meet the external assessment requirements.

Compulsory Units

Unit 1 Presenting Information

Unit 2 Handling Information

Unit 3 Hardware and Software*

Optional Units

Unit 4 Design Project

Unit 5 Communicating with Multimedia

Unit 6 Graphics and Desktop Publishing*

Unit 7 Numerical Modelling using Spreadsheets

Unit 8 Databases

Unit 9 Monitoring and Control Systems*

Unit 10 Data Communications and Networks

Unit 11 Programming

Unit 12 Impact of ICT on society