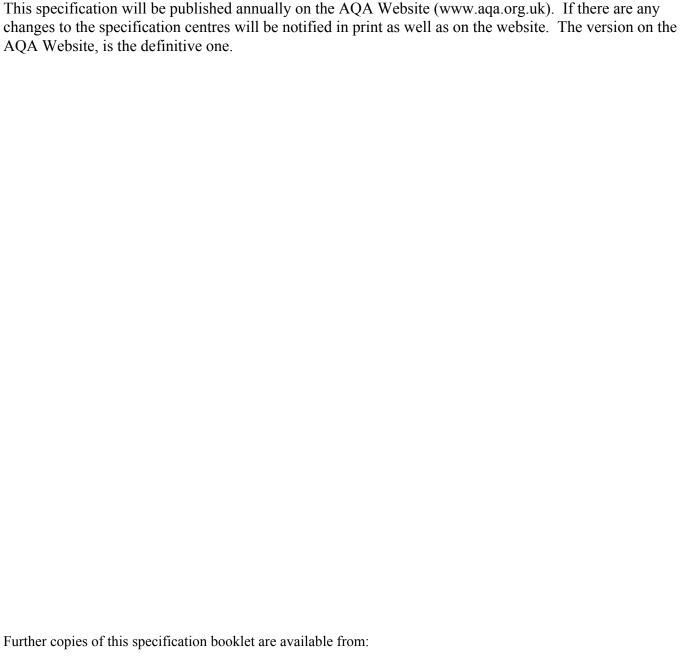# General Certificate of Secondary Education

Information and Communication Technology 3528
Specification B (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.

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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 Communications 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.

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2 Specification at a Glance

Information and Communication Technology B (Short Course)

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

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

GCSE Short Course 3528	
Written Paper	**40% of total marks**
Foundation Tier	1 hour structured, short answer questions set in contexts
Higher Tier	1½ hours structured questions some requiring longer written responses set in contexts
	All questions will be compulsory
Coursework	**60% of total marks**
Candidates are required to submit a report on **one coursework task from either of the two following themes:**	
• Communicating and handling information	
• Controlling, measuring and modelling	

Foundation Tier
3528F
Higher Tier
3528H

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 B: Foundation Tier   3528F
                                      Higher Tier   3528H

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.
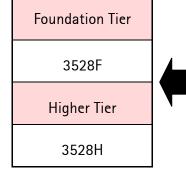
The classification code for this specification is 2650.

3.4	**Private Candidates**	This specification is only available for private candidates where they attend an AQA centre which will supervise and assess the coursework. Private candidates should write to AQA for a copy of *"Supplementary Guidance for Private Candidates"*.

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 assessment will be through the medium of English. Assessment materials will not be provided in Welsh or Gaeilge.

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Scheme of Assessment

4	Introduction

4.1 National Criteria

This GCSE 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 2008;

- 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 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 B (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 information systems. Candidates from all cultures and both genders can develop their interest in, enjoyment of, and critical reflection about information and communication 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 written examination paper testing Grades C-G or 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 B has been produced so that the knowledge, skills and assessment are all within the full GCSE Information and Communication Technology Specification B.

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.

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5   Aims

The aims set out below describe the educational purposes of following a course in Information and Communication 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 and Communication 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 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.

- 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.

Candidates will be assessed on their ability to organise and present information, ideas, descriptions and arguments clearly and logically, taking into account their use of grammar, punctuation and spelling.

6.2   Quality of Written Communication

Where candidates are required to produce extended written material in English, they will be assessed on the quality of written communication. Candidates will be required to:

- present relevant information in a form that suits its purposes;

- ensure that text is legible and that spelling, punctuation and grammar are accurate, so that meaning is clear.

Quality of written communication will be assessed only in the coursework component of the specification.

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7 Scheme of Assessment

7.1 Assessment Units

The Scheme of Assessment comprises two components.

Written Paper	
40% of the marks	
Foundation Tier	1 hour structured, short answer questions set in context
Higher Tier	1½hours short, structured questions set in contexts
	All questions will be compulsory

Coursework	
60% of the marks	**40 marks**

Candidates are required to submit a report on one coursework task from either of the two following areas:

- Communicating and handling information

- Controlling, measuring and modelling

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	20	10	30
b	-	40	40
c	10	10	20
d	5	-	5
e	5	-	5
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 syllabus covers the Programme of Study for Key Stage 4 of the National Curriculum Orders 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.
8.2	Contexts	The subject content may be taught in a range of realistic contexts, which include the home, leisure, recreation, school and education, the community, public services, business and industry. Contexts may be local, national or global.
8.3		The Subject Content is arranged in four sections.

The use of ICT to find, collect, process and present information.

Software and hardware.

Using ICT to solve problems.

The effects of using ICT.

Subject Content

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| 9.1 | ICT Systems and applications | The subject content of the specification may be taught through a range of applications that are accessible and relevant to candidates, from the perspective of a user. Study of these applications should include consideration of when it is appropriate to use ICT and when it is not.

ICT systems and applications include:

- Record keeping systems for school pupils, car parking, hospital patients, club membership, libraries, police and DVLA databases, geographic information systems (GIS);

- Banking, stock control, EFTPOS, payroll systems, estate agencies, newspaper production;

- Models for financial forecasting, queuing, predator/prey relationships, weather forecasting, flight simulators, expert systems for decision making (including medical diagnosis);

- Traffic control systems, greenhouse control systems, central heating control systems, data logging, robotics, process control;

- The Internet and the Web, e-mail, e-commerce, on-line booking systems, teletext, multimedia, virtual reality, recreational uses of ICT including games.

The above examples should be seen as suggestions and are neither prescriptive nor exhaustive.

| 9.2 | The use of ICT to find, collect, process and present information | Candidates should demonstrate skills in, and show knowledge and understanding of, the use of ICT to find, collect, process and present information. These should be developed and applied in a variety of contexts, ICT systems and applications for a range of purposes. This includes:

Information and data

The distinction between information and data. The identification of the input, storage, output, processing and feedback needed by an information system.

Finding information	Searching a wide range of sources of information, including the Web and on-line databases. The need for precision in framing questions when translating enquiries expressed in ordinary language into the form required by search engines.
	Search conditions, including 'greater than', 'less than', 'equals', 'contains', and complex searches using AND and OR. Refining search conditions.
Collecting information	Collecting information using manual and automatic methods of data collection, data capture, data preparation and input for common applications , including questionnaires, OMR (e.g. school registers), bar codes (e.g. shopping), MICR (e.g. banking), magnetic stripe cards (e.g. bank or credit cards), OCR, and voice recognition.
	The need for precision when collecting information.
Quality of information	Evaluating the accuracy and plausibility of information, including that found on web sites.
	Ensuring the accuracy and plausibility of information, including spelling and grammar checkers and their uses and limitations. Methods of error detection, including verification (visual checks and double entry); validation techniques (range checks and type checks.
Information and data structures	The purpose and use of information and data structures: alphanumeric and numeric data, including number formats; formulae, including arithmetic operations and functions (including sum, average, and if); appropriate use of spaces, tab, return, word-wrap; flat file databases, including files, records, fields, key fields, and codes.
Presenting information	The presentation of information in ways that are sensitive to the needs of particular audiences and the purposes of the presentation, including visual impact and readability.
	The use of text fonts, styles and sizes; justification and centring; bullets and numbering; clip art; word art; autoshapes; charts and graphs, including pie charts, bar charts, line graphs; multimedia, including sound, speech synthesis, stills and video; and wizards.
	Sorting information into ascending order.
Sharing and exchanging information	The transfer of data within and between applications, including import and export.
	E-mail, including addresses and attachments.
	Downloading information, including from the web; hyperlinks.
	E-commerce, including shopping and banking.

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	Modelling	The purpose and use of models, the reasons why models are used, and the capabilities and limitations of models.
		The effects of changing the variables in a model.
		The use of computer models to investigate situations.
		How rules govern the operation of a model, and the circumstances under which the rules governing a model should be changed.
	Controlling	The use of sensors to monitor and measure external events; data logging; the use of actuators to change physical conditions; operating a control system using a control language; and the role of feedback in determining the actions taken by a control system. Automation and robotics.

9.3	Software and hardware	Candidates should demonstrate their knowledge and understanding of the function, purpose and organisation of the hardware and software, and subsystems, used in a wide range of ICT systems and applications. This includes:
	Software	The use, function and purpose of:

- Graphic User Interfaces, including utilities to format a floppy disk and backup files. File organisation, including folders and filenames. File operations, including save, load and delete.

- Word Processing, Graphics, E-mail, Web Browser, Presentation and Desk Top Publishing software, Spreadsheets and Databases.

- Web sites including web addresses; web browser; search engine; e-mail; teletext.

- Software for measuring and recording physical data, and for data logging.

- Computer control languages and programming languages at an introductory level, including familiarity with Logo.

- Computer Assisted Learning, including Integrated Learning Systems.

	Hardware	The use, function and purpose of:

- Personal computer systems, including desktop computers, laptops, personal digital assistants (PDA) and tablet computers and their component parts.

- A range of input devices, including mouse, joystick, keyboard, touch screen, scanner, microphone and sensors.

- A range of devices and media for backing storage, including floppy disks, zip disks and hard disks; CD-ROM, CD-Recordable (CD-R), CD-Rewriteable (CD-RW), DVD-ROM, DVD-RAM, DVD-Recordable (DVD-R) and DVD-Rewriteable (DVD-RW).

- A range of devices for output, including screens, printers, speakers and actuators.

- Networks, including LANs, WANs and wireless networks, and their component parts; including file servers and modems.

- Network topology, including line and star. Client/server and peer-to-peer networks.

9.4	Using ICT to solve problems	Candidates should demonstrate skills in, and show knowledge and understanding of, the use of ICT to meet particular needs and solve problems, including the analysis, design, documentation, implementation, testing and evaluation of effective working ICT systems for use by themselves and others. This includes:
	The systems life cycle	The stages of the systems life cycle, including:

> systems analysis and design;
>
> the design, construction and testing of modified software packages
>
> implementation, including, systems testing and documentation;
>
> evaluation.

	The development of ICT systems and subsystems	The identification of a range of needs and opportunities. The systematic analysis of the requirements of a task, taking into account the information needed and the ways in which it will be used.

The use of appropriate problem solving techniques, including top down design, and the use of graphical representations of a system or subsystem, including flowcharts.

The development and testing of an ICT-based system that meets the requirements of the task.

	The development and testing of sequences of instructions	Creating, testing, and refining sequences of instructions to control events and automate processes. The need for precision in framing instructions.
	Documentation	The use, function and purpose of on-line help and tutorials; help lines; and user manuals.

The need for user documentation and technical documentation, and the criteria for good documentation.

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The appropriateness of ICT systems and subsystems	When ICT should and should not be used to solve problems. The appropriateness of an ICT system and its component subsystems.
	The selection and use of appropriate software and hardware.
	The suitability of the hardware and software used in specific applications, in terms of cost, speed of operation, ease of use and functionality.
	The evaluation of ICT systems, analysing the situations for which they were developed.

9.5	**The effects of using ICT**	Candidates should:

- reflect critically on the use of ICT by themselves and others;

- discuss and review the wider implications and effects of ICT, including the spiritual, moral, social, cultural, economic, political, legal, and ethical issues involved in the relationships between ICT and individuals, organisations and societies throughout the world.

This includes:

The relationship between ICT and society	the capabilities, limitations and effects of ICT systems. The advantages and disadvantages of using them, and the impact of them on:

- spiritual development, including the different capabilities, strengths and weaknesses of people and computers.

- moral issues, including freedom of information, privacy and the misuse of information; how ICT can exaggerate the impact of actions, including e-mail flaming and spam; intentional theft or corruption of information, and hackers.

- social organisation and communication, including small and remote communities; commercial and industrial activities and employment, including sustainable development; skill requirements for work; patterns of work, including teleworking; e-commerce, including shopping and banking; education, including approaches to teaching and learning; leisure, including games.

- cultural interaction and change, including the interaction between different cultures and subgroups; cultural homogenisation, globalisation.

- health and safety when using ICT, including in the home, at school and at work.

Dependency on ICT systems and the consequences if these systems fail.

Security

The need for security of personal and other data. Current legislation covering data protection and computer misuse.

Methods of preventing and detecting the loss or corruption of information; the abuse of personal and commercial information; and ensuring the security of ICT hardware and software, systems and components; including:

- physical security, including locks, clamps, alarms, supervision and location;

- encryption;

- system security, including usernames and passwords;

- backup, including methods of organisation, location and protection;

- virus protection.

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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 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 B (Short Course)

Communication Level 1

What you must do …	Signposting of Opportunities for Generating Evidence in Subject Content				
	Section 9.1	Section 9.2	Section 9.3	Section 9.4	Section 9.5
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 9.1	Section 9.2	Section 9.3	Section 9.4	Section 9.5
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 9.1	Section 9.2	Section 9.3	Section 9.4	Section 9.5
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 9.1	Section 9.2	Section 9.3	Section 9.4	Section 9.5
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 9.1	Section 9.2	Section 9.3	Section 9.4	Section 9.5
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 9.1	Section 9.2	Section 9.3	Section 9.4	Section 9.5
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 9.1	Section 9.2	Section 9.3	Section 9.4	Section 9.5
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 9.1	Section 9.2	Section 9.3	Section 9.4	Section 9.5
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 9.1	Section 9.2	Section 9.3	Section 9.4	Section 9.5
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				✓	

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Problem Solving Level 2

What you must do …	Signposting of Opportunities for Generating Evidence in Subject Content				
	Section 9.1	Section 9.2	Section 9.3	Section 9.4	Section 9.5
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 9.1	Section 9.2	Section 9.3	Section 9.4	Section 9.5
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 9.1	Section 9.2	Section 9.3	Section 9.4	Section 9.5
WO2.1 Plan work and confirm working arrangements		✓		✓	✓
WO2.2 Work co-operatively 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 9.5.
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. Opportunities for candidates to develop an understanding of citizenship issues are included in Section 9.5.
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 a report on one task.

12.2 Nature of tasks

Candidates will submit a report on **one** coursework task. In order to cover the requirements of this specification, the task must be located in one of the following areas:

1   Communicating and handling information

2   Controlling, measuring and modelling.

The task involves using ICT to solve a problem. It should address an identifiable need, for example of a third party and provide scope for candidates to demonstrate breadth and depth in their use of Information and Communication Technology. Tasks submitted may be selected from the examples given at the end of this syllabus. Normally, however, centres will guide candidates in developing tasks related to their own particular interests and aptitudes. These tasks should be:

- relevant to the candidates;

- broad enough to allow candidates to demonstrate the knowledge, skills and understanding required by the coursework marking criteria;

- restricted enough to allow candidates to complete the tasks satisfactorily.

In the presentation of coursework there is no distinction between what is required between the full and short courses in terms of the quality of work to be produced. Good practice is to be encouraged in all work regardless of the specification content.

13   Guidance on Setting the Centre-Assessed Component

13.1	**Duration**	The task should take between 15 to 20 hours to complete, although it is recognised that many candidates will take longer. The suggested time includes not only direct teaching time but private time away from the classroom.
		The work must clearly be that of the individual candidate. Group projects are not permissible
13.2	**The Report**	The report should be concise and of approximately 5 pages of A4, and should be supplemented by evidence of printouts, graphs, photographs etc. Reports must not include floppy disk or other media. The report should be word-processed, but in exceptional circumstances the work may be hand-written.
13.3	**Marking**	The coursework component is marked by the centre, internally moderated within the centre, where more than one marker is employed, and then moderated by AQA.
		The report should be marked in accordance with the criteria which follow. This overall coursework mark must then be submitted according to AQA regulations.
13.4	**Coursework Tasks**	The exemplars offered below serve as suggestions to help teachers as they begin to teach the course. They are not prescriptive in any way. They illustrate tasks that could be carried out by candidates and include examples from each of the two areas.
		The two areas covered are as follows:
	Communicating and handling information	In general, these tasks should focus on applications where Information and Communication Technology is used to process and present information. The software that will be most relevant to this area includes word-processing, graphics, Desk Top Publishing (DTP), Computer Aided Design (CAD), database, spreadsheet, multimedia and presentational software.
		• Kitchen design system (see page 29).
		• IT in an Estate Agent's office (see page 30).
	Controlling, measuring and modelling	These tasks will focus on applications where Information and Communication Technology is used to model real world situations, to investigate "what if ?" problems, to measure and process physical data. The software that will be most relevant to this theme includes spreadsheets, other modelling and simulation software, expert systems and programming languages.
		Exemplars given on the following pages are:
		• Investigating the activity of small mammals (see page 30).
		• Modelling the water cycle (see page 31).

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Kitchen design system

A candidate could use a CAD package to develop a library of kitchen appliances, cupboards, etc., for use in kitchen design. The same process could be used to place this task in a range of other contexts where a design package could be enhanced for specialist use, e.g. in car, bus, truck, train, yacht or motorbike design, by architects, for electronic symbols used in circuit design, etc.

This task offers opportunities to:

- Investigate the use of a commercial kitchen design package by visit to, or by, local kitchen designers.

- Undertake analysis of existing kitchens - questionnaire design and processing to identify key appliances and features for kitchens required by consumers.

- Research the dimensions of a range of appliances, cupboards, sinks, tables, chairs, etc.

- Design library entries, e.g. as clip art.

- Design ergonomic kitchens with specified space parameters. Possible extension into 3-D model generation.

- Document and evaluate the system.

The task, as described, does not have opportunities to demonstrate data collection, data structures, data validation, etc., within the design process but this is addressed in the questionnaire design and processing, giving candidates the opportunity to show their ability to handle data.

This type of extension is valid in most situations where a needs analysis has to take place, and it gives a good opportunity to demonstrate data handling skills in many contexts that would otherwise be based purely in communicating information (such as publishing).

Software that could be used:

Word-processing
Graphics/Computer Aided Design (CAD)
DTP/Presentation
Questionnaire Generator/Analysis
Database
Spreadsheet

IT in an Estate Agent's office

There is a range of commercial situations where IT is used extensively to process and communicate information. This example is set in an estate agency, which is accessible to most candidates. It could easily be transposed to any similar context, whether in business, industry, community or school.

This task offers opportunities to:

- Visit a local estate agent's office, to identify the range of activities that already use IT, or could sensibly do so.

- Identify uses of IT for inclusion in the task, e.g. database(s) of buyers and vendors, advertising, multimedia database of properties, accounting and billing.

- Research needs for each of these activities.

- Implement and test the system(s).

- Document and evaluate the systems(s).

This type of task, which uses IT for a range of different functions within one context, allows candidates to address both communication and handling of information in a meaningful way. It is usually possible to identify a task, using data handling as the core, that is within the experience and interest of candidates of all abilities.

Other contexts that could be used in a similar way include retailing, from shops to catalogues, leisure activities, from sport to the arts, holidays and tourism, libraries, clubs and societies.

Software that could be used:

Graphics
Wordprocessor (with mail merge)
DTP
Spreadsheet
Database
Multimedia software

Investigating the habits of small mammals

Observation of the behaviour of small mammals in a confined environment is possible during daylight, but requires constant vigilance. This makes it difficult to keep an accurate record over a period of more than an hour, and it is almost impossible to make observations at night.

The use of IT to solve this type of problem is a sensible approach, since it allows a wide range of possible solutions by selection of sensors and programming with a suitable control language or program.

AQA

This task offers opportunities to:

- Investigate the range of movements made by the small mammal in its environment. This will identify the areas that can be monitored, and will provide some idea of the volume of data that is likely to be collected over a given time scale.

- Identify sensors that will record events and parameters. These will be determined by the size and speed of movement of the small mammal, the accessibility of the environment and the dietary habits of the subject.

- Design a program structure, write and test it.

- Design a sampling scheme and use it to gather data.

- Process the data and present analysis.

- Document and evaluate the system(s).

The context for this type of task can be widened from this very specialised example. There are many similar situations where data logging can take place. Some will involve the long term monitoring of physical parameters (such as the design of a system to test insulating properties of building materials) to event-centred tasks such as intruder alarms and car park barrier systems. All of these offer the opportunity to select appropriate sensors and actuators, and give a genuine opportunity to use programming skills.

Resources that could be used:

Graphics
Wordprocessor
Control software
Data presentation package
DTP software
Control interface with a range of sensors
Database

At all times the welfare of the animals must be considered.

Modelling the water cycle

There is a wide range of opportunities to model situations in mathematics, the humanities and science. These may involve physical, population-based or economic texts, amongst others. The same regime of investigation, implementation and evaluation can be carried out regardless of the context chosen.

It is not necessary for candidates to design the model from scratch themselves, although their implementation must be original. It will often be more appropriate to develop a computer-based model from relationships found in appropriate literature, such as CD-ROM. Quite often this type of task will arise naturally out of work being carried out in another curriculum area, and this can be a good stimulus to the production of an effective model.

This task offers opportunities to:

- Investigate the stages in the water cycle, the variables involved and their relationship to each other.

- Identify the parameters for each stage and range of values for variables.

- Design the model, identifying the formulae linking the variables.

- Implement the designed system, using appropriate software.

- Test the designed system with known data, to compare it with reality.

- Refine the system, to improve the accuracy of the model.

- Document and evaluate the system.

Other contexts that can be used effectively for modelling include genetics, predator-prey relationships, demography, traffic management schemes, macro- and micro-economics, etc.

Software that could be used: Graphics
Wordprocessor
DTP/Presentation package
Modelling software, such as a spreadsheet

13.5   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.

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14   Assessment Criteria

14.1	Introduction

The coursework consists of one task (60%). The task is marked out of 40.

The criteria descriptions 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 whole for each component.

14.3   Summary of Assessment Criteria

		Marks
A	Description of the task to be attempted	3
B	Analysis	3
C	Specification	3
D	Design of the ICT system	4
E	Implementation	
	(i) Hardware resources required	2
	(ii) Software resources required	2
	(iii) Data collection, data capture and input	2
	(iv) Data verification and/or validation	3
	(v) Data and/or program structures	2
	(vi) Output format	3
F	Testing	4
G	User Documentation	3
H	Evaluation	3
J	Communication within the report	3
	Total	40

14.4 Criteria for Marking the Task

A Description of the task to be attempted (3 marks)

Marks

3 The description is concise and clear and shows a good understanding of what is involved within the problem

2 Description is evident and shows some understanding of the problem

1 A simple outline of the problem to be solved

0 Little or no description

To be worth more than 1 mark, the description should provide sufficient detail to provide a clear indication of the problem, in both depth and extent, that the candidate has chosen to solve.

B Analysis (3 marks)

Marks

3 A clear understanding and analysis of what is involved within the problem, an insight into the possible methods that could be employed in its solution and reasons for the chosen method of solution.

2 An understanding and analysis of what is involved within the problem and an insight into the possible methods that could be employed in its solution

1 Some analysis of what is involved within the problem

0 No, or a cursory, analysis

Here the candidate should have analysed the task and have looked at the possible alternative methods of solution. To gain 3 marks the candidate should make a reasoned judgement as to why the chosen method of solution is to be used.

C Specification (3 marks)

Marks

3 Detailed and reasoned specification of how the solution will be judged as a success

2 Evidence of a specification of how the solution will be judged as a success

1 Some evidence of a specification

0 No specification

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In this section the candidate shows that the solution to the problem has clear evaluation criteria. To gain 3 marks the candidate should demonstrate depth and sophistication in the criteria that will be used to judge the success of the final solution.

D   Design of the ICT system (4 marks)

Marks

4   A clear and logically laid out design using a variety of techniques

3   A clearly laid out design using a variety of techniques

2   A clearly laid out design

1   Some evidence of a design

0   No evidence of a design

Having chosen the appropriate method and identified the requirements of the solution, the candidate should develop a planned design of the ICT system and describe the relationship between the various parts of the solution, using a variety of presentation techniques which could include flowcharts, algorithms, structure or systems diagrams.

E(i)   Hardware resources required (2 marks)

Marks

2   An indication of the selection of hardware with justifications for the choice made

1   An indication of the selection of hardware

0   No indication of the selection of hardware

These marks are awarded for the selection of appropriate computer hardware including interfaces and control packages for measurement and control. In control tasks, marks for the choice of sensors and actuators would be given in sections E(iii) and E(vi).

E(ii) Software resources
required (2 marks)

Marks

2 An indication of the selection of software with justifications for the choice made

1 An indication of the selection of software

0 No indication of the selection of software

These marks are awarded for the selection of appropriate computer application software.

E(iii) Data collection, data
capture and input
(2 marks)

Marks

2 Evidence, with clear justifications, of the design of methods of collecting or inputting data

1 Evidence of the design of methods of collecting or inputting data

0 No evidence of the design of methods of collecting or inputting data

In measurement and control tasks, marks can be awarded for the selection of sensors, sampling times, variables and calibration (as appropriate).

E(iv) Data verification
and/or validation
(3 marks)

Marks

3 An understanding of and use of appropriate verification and/or validation techniques

2 A critique as to whether verification and/or validation techniques are appropriate

1 A simple mention of possible verification and/or validation techniques

0 No mention of possible verification and/or validation techniques

Not all applications software readily incorporates automatic or user defined verification and/or validation techniques. However, the candidate should be aware of how data is checked and, where appropriate, should have used methods to check that data inputted into their system is correct. Possible verification checks could include visual checking, double entry, etc. Whilst validation could include range checks, etc.

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E(v)   Data and/or program
          structures (2 marks)

Marks

2   Justification given for data and/or program structures used

1   Appropriate data and/or program structures designed and used

0   No evidence of appropriate data and/or program structures

In measurement and control tasks, these marks can be awarded for the appropriate program structures and techniques, such as procedures, as well as for data structures such as files for data logging.

E(vi)   Output format
          (3 marks)

Marks

3   Justification for the design and use of a range of customised output formats

2   Evidence of the design and use of a range of customised output formats

1   Evidence of the use of a range of default outputs formats

0   No evidence of output formats

In this section the candidate should be aware that the default outputs from application software are not always appropriate and that the output should be designed with the needs of the intended audience in mind, i.e. in databases the reports do not always have to include all of the database's fields. In measurement and control tasks, these marks can be awarded for the selection of appropriate physical outputs (such as lights, sound or movement) as well as printed output.

F   Testing (4 marks)

Marks

4   Evidence of testing of the solution using a clearly defined, comprehensive and fully justified strategy

3   Evidence of testing of the solution using a clearly defined and comprehensive strategy

2   Evidence of testing of the solution using a defined strategy

1   Evidence of some testing of the solution

0   No evidence of any testing of the solution

To be worth 4 marks there must be a justified and appropriate testing strategy, with evidence of its use. If the strategy does not cover most of the requirements, or is not explained clearly then only 2 or 3 marks can be awarded. Random testing can be awarded only 1 mark at the most, but candidates must indicate in the report that testing has taken place if this mark is to be awarded.

G   User documentation
     (3 marks)

         Marks

     3   Clear and logical instructions as to how to use the ICT system, and how to amend the ICT system if necessary including the technical aspects of the use the ICT system.

     1   Clear instructions as to how to use the ICT system, and how to amend the ICT system if necessary

     2   Some simple instructions as to how to use the ICT system

     0   No evidence of any user documentation

         To be awarded marks in this section there must be separate and identifiable documentation that would enable an unfamiliar user to operate and adapt the ICT system designed.

H   Evaluation (3 marks)

         Marks

     3   An evaluation of the ICT system based on the specification with suggestions for future refinements

     2   An evaluation of the ICT system based on the specification

     1   Some evaluation of the ICT system, without reference to the specification

     0   A cursory or no evaluation of the ICT system

         In this section the candidate should refer to the evaluation criteria provided in Section C of the assessment criteria.

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J   Communication within the report (3 marks)

Marks	
3	Presentation of the report is of a high quality and uses a varied range of techniques. The needs of the intended audience are catered for and spelling, punctuation and grammar is used with consistent accuracy
2	Presentation of the report is good and uses a range of techniques, and spelling, punctuation and grammar is used with accuracy
1	Presentation of the report uses a limited range of techniques, and spelling, punctuation and grammar is used with reasonable accuracy
0	Presentation of the report is basic with inaccurate use of spelling, punctuation and grammar

K   Quality of written communication

The marks for quality of written communication are provided in the assessment criteria under the heading 'Communication within the report'.

14.5   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.

14.6   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 2008). This enables the moderator to check the centre's assessments against the Assessment Criteria.

Annotation should, therefore:

a   describe in all necessary detail practical work which is not available, together with comments from the teacher;

b   explain where candidates have received help beyond the normal learning support which has influenced the assessments;

c   highlight those key areas which have led to the recognition of a particular mark. Reference to the Assessment Criteria is particularly helpful;

d   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.

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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. (see Page 48)

17		**Administrative Procedures**

17.1	**Recording Assessments**	The candidates' work must be marked according to the assessment criteria set out in section 14.4. The marks and supporting information must be recorded in accordance with the instructions in sections 14.5 and 14.6. 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. Candidates repeating the examination may carry forward their moderated mark for the coursework component once only and within a twelve month period.

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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 General Certificate of Secondary Education 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 re-taking the examination may carry forward their moderated coursework marks. These marks have a shelf-life which is limited only by the shelf-life of the specification, and they may be carried forward an unlimited number of times within this shelf-life.
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 2008 and will be revised in the light of any subsequent changes for future years.

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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

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- 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 and Centre Declaration Sheets are available on the AQA website in the Administration area. They can be accessed via the following link
http://www.aqa.org.uk/admin/p_course.php

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

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