

GCSE

Specification

ICT (Short Course)

For exams June 2011 onwards

For certification June 2011 onwards





GCSE

Specification

**Information and
Communication
Technology
Short Course
4520**

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1 Introduction



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1.1 Why choose AQA?

We are the United Kingdom's favourite exam board and more students get their academic qualifications from us than from any other board. But why are we so popular?

We understand the different requirements of each subject by working with teachers. Our GCSEs:

- help students achieve their full potential
- are relevant for today's challenges
- are manageable for schools and colleges
- are easy to understand by students of all levels of ability
- lead to accurate results, delivered on time
- are affordable and value for money.

We provide a wide range of support services for teachers, including:

- access to subject departments
- training for teachers, including practical teaching strategies and methods that work, presented by senior examiners

- individual support for Controlled Assessment
- 24-hour support through our website and online with **Ask AQA**
- past question papers and mark schemes
- a wide range of printed and electronic resources for teachers and students
- free online results analysis, with Enhanced Results Analysis.

We are an educational charity focused on the needs of the learner. All our income is spent on improving the quality of our specifications, examinations and support services. We don't aim to profit from education, we want you to.

If you are already a customer we thank you for your support. If you are thinking of joining us we look forward to welcoming you.

1.2 Why choose this GCSE Short Course in Information and Communication Technology?

AQA's specification for GCSE ICT Short Course brings the subject content right up to date with resources that have been designed to engage all students. At the same time, there is much continuity between the subject content of the Curriculum 2000 specifications and this one. This specification gives emphasis to the development of transferable skills, such as thinking creatively, logically and critically and, in particular, to problem solving and collaborative working skills. Functional Elements are also embedded in this specification which will save valuable curriculum time.

This specification has something for everyone:

- for teachers, it offers the opportunity to use the very latest technology when teaching the subject content which will help them to motivate students. Our e-technology will also cut down the time spent on administration and help teachers to monitor the performance of candidates
- for candidates, the scheme of assessment has something to engage the whole ability range of candidates. For example, the sectionalisation

of Systems and Applications in ICT is particularly useful in the context of there being no tiered assessment at Foundation and Higher levels. Sections B and C of the question paper will add an element of stretch and challenge for the more able.

- for centres, it offers flexibility in the scheme of assessment as it is both modular (which allows candidates to bank units as they progress through the course) and, alternatively, provides for those which wish to operate in a linear fashion. All units will be available in June each year.

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 it subsumes the Programmes of Study for Key Stages 1 to 3. It meets the statutory requirements for Key Stage 4 in Northern Ireland and Wales. The subject content meets the requirements of the National Criteria for GCSE ICT, and prepares candidates for courses leading to A-level ICT, Computing and the IT Diploma.



1.3 How do I start using this specification?

To ensure you receive all the teaching and examination material, it is important that the person responsible for making the decision to teach AQA informs both AQA and their Exam Officer.

Step one:

To confirm you will be teaching this specification go to **www.aqa.org.uk/signup** and complete the online form. You will then receive your free GCSE Information and Communication Technology Short Course welcome pack(s) that contain teaching and support material and regular updates by e-mail from AQA.

Step two:

Inform your Exam Officer of your choice to ensure you receive all your examination material. Your Exam Officer will make sure that your centre is registered with AQA and will complete the Intention to Enter and Estimated Entries when required to do so. If your centre is registered on e-AQA such information can be submitted online.

If your centre has not used AQA for any examinations in the past, please contact our centre approval team at **centreapproval@aqa.org.uk**.

1.4 How can I find out more?

You can find out more about this specification or the services that AQA offer in a number of ways.

Ask AQA

You have 24-hour access to useful information and answers to the most commonly asked questions at **www.aqa.org.uk/askaqa.php**

If the answer to your question is not available, you can submit a query through **Ask AQA** for our team. We will respond within two working days

Speak to your subject team

You can talk directly to the ICT subject team about this specification either by e-mailing **ict-subjects@aqa.org.uk** or by calling 0161 958 3860.

Teacher Support Meetings

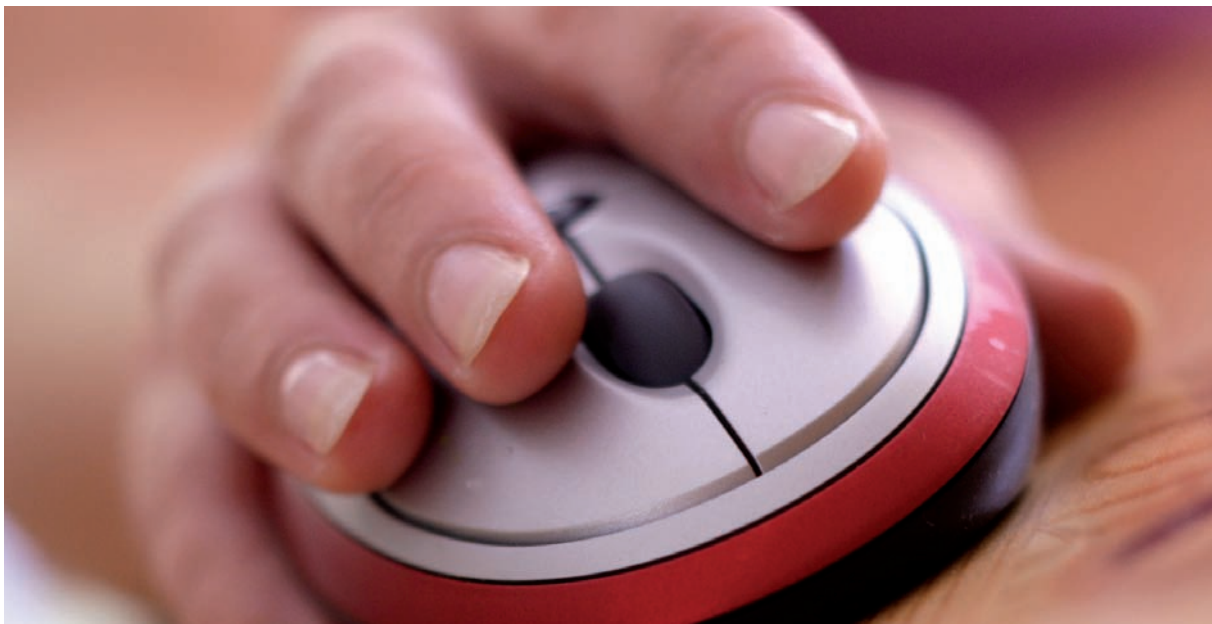
Details of the full range of our Teacher Support meetings are available on our website at **www.aqa.org.uk/support/teachers.php**

There is also a link to our fast and convenient online booking system for Teacher Support meetings at **events.aqa.org.uk/ebooking**

If you need to contact the Teacher Support team, you can call us on 0161 957 3925 or e-mail us at **teachersupport@aqa.org.uk**

Latest information online

You can find out more including the latest news, how to register to use Enhanced Results Analysis, support and downloadable resources on our website at **www.aqa.org.uk**



2 Specification at a Glance

The Scheme of Assessment has two components.

Unit 1 Systems and Applications in ICT (60 marks)

1 hour

40% of the marks

Externally assessed

Section A: 5 structured questions featuring a range of types of questions from very short to questions requiring 2 or 3 line answers.

Section B: 2 structured questions featuring short and extended answer questions.

All questions will be compulsory in Sections A and B.

Section C: 1 essay question from a choice of 2.

**CODE
45204**

PLUS

Unit 2 The Assignment: Applying ICT (100 marks)

Approximately 25 hours of Controlled Assessment

60% of the marks

Internally assessed, externally moderated

The description of a situation will be provided by AQA each year. Within the given situation, and working independently, candidates will be asked to solve one or more tasks requiring independent use of ICT. A new Assignment will be provided every year by AQA. Candidates must submit the Assignment current for the year in which they take the unit.

**CODE
45202**

3 Subject Content

Content Overview

This subject content should be taught using a range of realistic contexts which include the home, leisure, recreation, school and education, the community, public services, business and industry.

The subject content is arranged in four Sections, 3.1 to 3.4. Below is an overview of the four sections.

The same numbering has been used as for the GCSE Full Course so that users of both specifications can see the differences.

■ Section 3.1 Current and emerging technologies

- 3.1.1 Computer systems and mobile technologies
- 3.1.2 Current input devices, output devices and backing storage
- 3.1.4 Communications and entertainment.

■ Section 3.2 A range of ICT tools and techniques

- 3.2.1 Systems life cycle
- 3.2.2 Working with information to solve problems
- 3.2.4 Applications software
- 3.2.5 Word processing, DTP, web design and other presentation software
- 3.2.6 Graphics production and image manipulation
- 3.2.7 Spreadsheets and modelling software
- 3.2.8 Databases
- 3.2.9 Web browsing and e-mail
- 3.2.10 Web logs and social networking
- 3.2.11 Control software.

■ Section 3.3 Society's use of ICT

- 3.3.1 Legal issues
- 3.3.2 Social and economic issues
- 3.3.3 Political, ethical and environmental issues.

■ Section 3.4 Collaborative working

- 3.4.1 Principles and processes of collaborative working.

Teaching and learning opportunities for functional elements of ICT in the subject content

Functional elements of ICT are embedded in the subject content of this specification – see references to 'FE' throughout Section 3. 53% of GCSE assessment is allocated to the Functional Elements in ICT.

The completeness of the subject content

Throughout the subject content the learning objectives are specified. These will not change during the lifespan of the specification. Examples are used to indicate the total range of items that should be taught. The indicative examples will be reviewed annually to accommodate emerging technologies and an update published in the specification on the AQA Website in September of each year. Any changes will be side barred and the version number of the specification will change. There is no intention for the assessment to go beyond the items listed other than in exceptional circumstances, for example where the speed of the introduction of a ubiquitous new technology outstrips the speed at which the specification can be updated.

ICT systems and applications

In each of the four sections of subject content, 3.1 to 3.4, ICT systems and applications should be used to offer teaching and learning opportunities.

Thus candidates will be expected to:

- have studied the content of all four 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 and communication technology solution
- understand that ICT systems may be described in terms of inputs, storage, processing and output
- understand how data flows through a system in these terms
- understand that ICT systems are there to solve problems.

Here are some ICT systems and applications that you may wish to use. The items in this list are suggestions; they are neither prescriptive nor exhaustive.

- **Assistance:** for people with disabilities, by physical (for example: screen filters, communication and control devices) and software methods (accessibility options)
- **Banking systems:** Banking, cash machines/points, credit/debit cards, cash cards, mobile phone payment (m-payment/Pay4It/Paypal)
- **Booking/commercial systems:** online booking systems, billing/payment systems (gas, electricity, mail orders), stock control systems, benefits system, newspaper/magazine production
- **Buying goods:** shopping and EFTPOS, online shopping (home delivery), produce receipt from bar code scanning, adjusting product ranges and prices, shopping lists with prices
- **Database systems:** Libraries (members' details and book loans), police and DVLA databases, estate agencies, travel agencies, tourist information centre
- **Health:** medical systems (General Practice, hospital and pharmacy), social services, online access to advice/information
- **Information systems:** Internet and the World Wide Web, e-mail, online auctions, e-learning (software to support learning and research across the curriculum), e-commerce, e-banking, e-finance (for example Paypal), online news services, online travel information, smart mobile phones
- **Leisure:** cinema, theatre, concerts, holiday bookings, travel schedule, online gaming, music downloads, online chat rooms, social networking, web logs, podcasts, recreational uses of ICT, online gambling
- **Modelling:** personal finance, models for financial forecasting, queuing, weather forecasting, flight simulators, expert systems for decision making (for example medical diagnosis and chess playing)
- **Record keeping systems for school students:** (School Management Systems – registration, records, reports), club membership (youth club, health club)
- **School issues:** virtual learning environments, events, visits, activities, teams, school clubs, library, school lunch, local community, productions

Detailed Content

Section 3.1: Current and emerging technologies

Candidates should demonstrate their knowledge and understanding of the function, purpose and organisation of the hardware and sub-systems used in a wide range of ICT systems and applications. They should also show their understanding of the impact that the use of such technologies has on individuals, organisations and society. Candidates should be encouraged to keep up-to-date with emerging technologies throughout the duration of their course.

This section contains:

- 3.1.1 Computer systems and mobile technologies
- 3.1.2 Current input devices, output devices and backing storage
- 3.1.4 Communications and entertainment

The same numbering has been used as for the GCSE ICT Full Course so that users of both specifications can see the differences.



3.1 Current and emerging technologies

3.1.1 Computer systems and mobile technologies

FE

Subject Content	Learning outcomes	Indicative example(s)
a. Hardware and software	Describe the differences between hardware and software	
b. Mobile technologies	Describe the differences between mobile digital devices in terms of portability, performance, storage, connectivity and applications; understand that mobile devices provide access from anywhere	Laptops/netbooks, smart mobile phones, palmtops, PDAs, multi-function devices, tablets, e-book readers and dongles
c. Emerging technologies	Know how emerging technologies affect the way in which people and organisations operate and work together	

3.1 Current and emerging technologies

3.1.2 Current input devices, output devices and backing storage

Subject Content	Learning outcomes	Indicative example(s) <i>The following lists show examples of current input/output devices and backing storage</i>
a. Input devices (common and specialist)	Describe the use of a range of common and specialised input devices	Keyboard and specialised keyboard, mouse, joystick, tracker ball, touch pad, microphone (voice input), remote control, scanner, digital/video camera, web cam, touch screen, interactive white board, magnetic stripe and sensor Bar-code reader, OMR reader, OCR reader, RFID reader, graphics tablet and midi instrument
b. Output devices (common and specialist)	Describe the use of a range of common and specialised output devices	Monitor/screen, printers (laser, inkjet), speakers and digital projector Plotters, actuators, lights, buzzers, robotic arms and computerised-motors
c. Backing storage devices and media	Define 'backup' and describe the need for taking backups of data/programs and keeping them safe and describe common backing storage media	Backing storage media: memory stick/pen drive/USB drive, CD-Rom, DVD-Rom, CD-R (Recordable), CD-RW (Re-writable), DVD-RAM, DVD-R, DVD-RW, BD-R, hard disks (fixed and removable), magnetic cartridges (for backup), flash memory (camera, MP3 player) and solid state disks

3.1 Current and emerging technologies

3.1.4 Communications and entertainment

FE

Subject Content	Learning outcomes	Indicative example(s)
a. Advantages and disadvantages of using communications networks	i. Identify the advantages and disadvantages of using common network environments (the Internet) and methods of connecting them ii. Define the terms LAN and WAN, and describe the difference between them iii. Identify the need for encryption and authentication techniques when using common network environments like the Internet	Communications devices: telephones, SMS (texting), instant messaging, fax, e-mail, chat rooms, forums, bulletin boards, VoIP/Internet telephone and Sat Nav
b. Communication devices and media	Identify the use of a variety of communication devices/media	Network devices: broadband, dial-up modem, mobile device, file server, print server and e-mail server
c. Network devices	Describe network devices using communications systems to access the Internet	Entertainment systems: TV (terrestrial, digital, cable, broadband), radio, video, film and music streaming; games consoles, integrated entertainment systems Entertainment processes: computer streaming of a variety of entertainment forms, digital TV recording (on hard disk) – paused, re-started and acting in real time
d. Entertainment systems	i. Describe the use of a range of entertainment systems ii. Describe advantages and disadvantages of media downloads/streaming to different entertainment devices	

3.1 Current and emerging technologies

3.1.4 Communications and entertainment (continued)

FE

Subject Content	Learning outcomes	Indicative example(s)
<p>e. Reliability of information</p>	<ul style="list-style-type: none"> i. Discuss issues relating to information found on the Internet ii. Recognise and evaluate the fitness for purpose of information found in terms of relevance, accuracy, bias and currency of information and consider the intention and authority of the provider 	<p>Unreliability and undesirability of information requiring discrimination when selecting it to match requirements and security of data transfer</p>
<p>f. Impact of communications technology</p>	<p>Discuss the impact which communications and entertainment technology has on people, organisations and society</p>	<p>Wireless (WiFi, Bluetooth) and wired networks; speed and volume of data transferred, and bandwidth</p> <p>Use of cookies for transaction tracking</p>

Detailed Content

Section 3.2: A range of ICT tools and techniques

Candidates should demonstrate skills in, and show knowledge and understanding of, the use of ICT to find, collect, process and present information. These skills should be developed to meet particular needs and to solve problems. The skills are the analysis, design, documentation, implementation, testing and evaluation of effective working ICT systems for use by the candidates and others.

This section contains:

- 3.2.1 Systems life cycle
- 3.2.2 Working with information to solve problems
- 3.2.4 Applications software
- 3.2.5 Word processing, DTP, web design and other presentation software
- 3.2.6 Graphics production and image manipulation
- 3.2.7 Spreadsheets and modelling software
- 3.2.8 Databases
- 3.2.9 Web browsing and e-mail
- 3.2.10 Web logs and social networking
- 3.2.11 Control software

The same numbering has been used as for the GCSE ICT Full Course so that users of both specifications can see the differences.



3.2 A range of ICT tools and techniques

3.2.1 Systems life cycle

FE

Subject Content	Learning outcomes	Indicative example(s)
The Systems life cycle	<ul style="list-style-type: none"> i. Understand the purpose and nature of and use evaluation criteria (desired outcomes and performance criteria) ii. Identify the stages of the systems life cycle, feasibility study; systems analysis; design of a problem (plans for construction and testing of new system); implementation; system testing; user training and documentation; evaluation and monitoring; maintenance. Know the systems life cycle is an iterative review process 	Test data includes normal, extreme and critical data

3.2 A range of ICT tools and techniques

3.2.2 Working with information to solve problems

FE

Subject Content	Learning outcomes	Indicative example(s)
a. Information and data	Describe the link between input, storage, output, processing and feedback needed by an information system	
b. Finding, selecting and using information	<ul style="list-style-type: none"> i. Use discrimination in selecting and using appropriate sources of ICT-based and other forms of information, which match requirements ii. Understand the need for precision in framing questions, when translating enquires expressed in 'ordinary language' into the form required by search engines 	<p>Sources: newspapers/magazines, books/e-books, images, maps, conversation, CD and DVD-ROMs, text message, Internet, online databases, podcasts, web logs (blogs) and wikis</p> <p>Search criteria: 'greater than', 'less than', 'equals', 'contains', use find with wild cards, key words, complex searches using AND, OR and NOT and the use of quotation marks around phrases</p>
c. Quality of information and/or data	<ul style="list-style-type: none"> i. Evaluate and question the accuracy and plausibility of information ii. Ensure the accuracy and plausibility of information iii. Describe methods of error detection (verification and validation techniques) of data during the input stage 	<p>Information from websites</p> <p>The uses and limitations of spelling and grammar checkers</p> <p>Visual checks and double entry</p> <p>Range checks, type checks, presence checks, length checks, check digits and look-up lists</p>
d. Data collection/capture methods	Describe and identify common uses of different data collection methods	<p>Methods: data capture form, questionnaires, online forms, chip and PIN, OMR, bar code reader, magnetic stripe cards, voice recognition (security entry systems), biometrics and RFID tags</p>

3.2 A range of ICT tools and techniques

3.2.2 Working with information to solve problems (continued)

FE

Subject Content	Learning outcomes	Indicative example(s)
<p>e. Reviewing and modifying work</p>	<p>i. Work accurately and proof read, using software facilities where appropriate</p> <p>ii. Understand that work is reviewed and modified as it is produced, using drafts, to ensure it is fit for purpose and that the meaning is clear. It is reviewed critically against the initial plan and the feedback of others to inform future work and judgements</p>	<p>Facilities: check spelling/calculations</p> <p>Check with the intended audience</p>
<p>f. Presenting information in ways that are fit for purpose and audience</p>	<p>i. Understand the purposes of presentations</p> <p>ii. Appropriately bring together and organise information to produce a poster, newsletter, web page or multimedia presentation</p> <p>iii. Present information in ways which are sensitive to the needs of particular audiences and the purposes of the presentation</p> <p>iv. Produce information that is relevant and fit for purpose and audience, using accepted layouts and conventions where appropriate. Consider content, readability, visual impact, detail, consistent layout and complexity</p>	<p>Presentations: visual (on screen and as hard copy) and multi-sensory (in multi-media presentations)</p> <p>Information types: images, text of different forms or from different sources: text alignment, captions, audio and/or video and charts</p> <p>Information forms: letter, essay, memo, report, poster, newsletter, leaflet, flyer, brochure, web page, magazine, business card and multi-media presentation</p>
<p>g. Sharing and exchanging information electronically</p>	<p>Understand that data can be transferred within and between applications, using file sharing websites and virtual learning environments</p>	<p>Information transfer: import and export of data, file attachments, photo-sharing websites</p>
<p>h. Organising files/folders</p>	<p>Describe the management and organisation of files and file operations</p>	<p>File management of folders, subfolders, filenames, file types, paths, create new file, save, save as, open, close, rename, delete, move, copy, download files</p>

3.2 A range of ICT tools and techniques

3.2.4 Applications software

FE

Subject Content	Learning outcomes	Indicative example(s)
<p>a. Use of applications software</p>	<p>Understand that applications software is designed to carry out user-related tasks to solve problems. Make informed decisions, select and use software applications to meet needs, solve problems and be aware of their implications for others</p>	
<p>b. Generic features of software (appearing as reasonably common features in most software packages)</p>	<p>Understand, and have experienced the use of, a range of generic features of a variety of software types, to enter, organise and develop information</p>	<p>Generic features: enter and format text to maximise clarity and enhance presentation: select, copy, cut and paste, fonts; font/text size, style (boldening, italics, underlining) and colour, drag and drop, undo and redo, find and replace, zoom, wordart (or similar), wizards, help, print and print preview; appropriate page layout, margins, headers and footers, alignment (horizontal and vertical text) and justification (left/right/full justification, centring), orientation (portrait and landscape), page breaks, page numbering, templates; insert text boxes, obtain, insert, resize, crop and position images that are fit for purpose (i.e. clipart, photo and scanned images), autoshapes, shading, place behind and in front of other 'objects', wrap text, print screen</p>

3.2 A range of ICT tools and techniques

3.2.5 Word processing, DTP, web design and other presentation software

FE

Subject Content	Learning outcomes	Indicative example(s)
<p>a. Specific features of and differences between a word processor and DTP</p>	<p>i. In addition to generic features in 3.2.4b, identify the common features found in word processors, DTP and other presentation software, to enter, organise, develop, refine and format information</p> <p>ii. Explain the distinction between word processors and DTP</p>	<p>Word processing and DTP features: formatting text to maximise clarity and enhance presentation including: edit text, auto wrap, lists, indentation, tabs, paragraphs, bullets, headings and sub headings, numbering and sub numbering, borders, page and line breaks, line spacing, columns, sections/chapters, create and format tables, merge and split table cells, spelling and grammar checkers and their limitations, word count, grouping, ungrouping, layering</p> <p>Essentially word processors deal with text documents whereas DTP deals with text and graphic publications</p>
<p>b. Use features of different software packages to organise and present information</p>	<p>Identify tasks and use features of word processors and DTP in order to create documents</p>	<p>Word processing documents: letters, essays, memos and reports</p> <p>DTP documents: posters, leaflets, flyers, brochures, catalogues, magazines and business cards</p>
<p>c. Presentation software</p>	<p>i. In addition to generic features, understand that presentation software used should allow a range of features</p> <p>ii. Understand that interactive and multimedia presentations combine textual, graphical or multimedia formats</p>	<p>Presentation software features: insert slide, enter and edit slide content, buttons and other hyperlinks; sound effects, animation, layouts, colour schemes, slide transitions, timing, print handouts, view slide show and control movement between slides (kiosk)</p>
<p>d. Web design software</p>	<p>In addition to generic features, understand the features of web design software to design pages and links between them</p>	<p>Web design features: master pages, hotspot, hyperlink, navigation bar, templates and layout guides, forms, marquee, animation, flash tools, RSS feed, counters and conversion to HTML</p>

3.2 A range of ICT tools and techniques

3.2.5 Word processing, DTP, web design and other presentation software (continued)

FE

Subject Content	Learning outcomes	Indicative example(s)
e. Software for audio, DVD and video players	Understand this software may be used to allow a range of features	Audio/video software features: volume adjustment, mute, play, pause, forward/fast forward, backward/reverse, start, stop, end, playlist, subtitles, music downloads and streaming
f. Podcast	Understand the use and purpose of a podcast	

3.2.6 Graphics production and image manipulation

FE

Subject Content	Learning outcomes	Indicative example(s)
Specific features of graphics manipulation software	<ul style="list-style-type: none"> i. Identify specific features of basic graphics packages ii. Identify tasks which can be carried out using graphics packages 	<p>Graphics software features: erase, fill with colour, pick colour, choose pencil, brush and airbrush, shade, lines, curves, layering, rotating, repeating pattern and morphing</p> <p>Changing the look of scanned, drawn or photographic images; manipulation packages (morphing)</p>

3.2 A range of ICT tools and techniques

3.2.7 Spreadsheets and modelling software

FE

Subject Content	Learning outcomes	Indicative example(s)
<p>a. Types of data (common to spreadsheets and databases)</p>	<p>i. Identify different data types</p> <p>ii. Know about formatting a variety of cell types</p>	<p>Data types: numerical/number formats (integer, currency, percentages, number of decimal places and fraction), alphanumeric/text, date/time, limited choice (drop down list, radio buttons, tick lists), object, logical/Boolean (Yes/No, Male/Female)</p> <p>Cell types: font formats (style, size, colour), text alignment (horizontal and vertical), text wrap, merging cells, cell borders and shading</p>
<p>b. Specific features of a spreadsheet</p>	<p>Describe the use of a range of specific features of spreadsheet software, that enter, develop and organise numerical information that is fit for purpose</p>	<p>Spreadsheet software features: cells, cell references, rows, columns (and their height and width), show row/column labels, enter and edit cell content, cell gridlines, cell ranges, replication, formatting, merging cells, formulae, functions, show structure of worksheet (formulae/functions), automatic recalculation, sorting rows/columns, graph/chart creation and development to suit numerical information (bar chart, pie chart, line graph, scattergram and the use of scales, a title, axis title and key/legend), layout of worksheets and linked sheets</p>
<p>c. Formulae and functions</p>	<p>Understand the use of a range of common formulae and functions, relative and absolute cell references</p>	<p>Formulae: +, -, *, /</p> <p>Functions: SUM, AVERAGE, ROUND, ROUNDUP, IF, MAX, MIN, RANK, COUNT and LOOKUP</p>
<p>d. Modelling</p>	<p>i. Understand how to model situations</p> <p>ii. Describe how a model may be used to answer 'what if' questions and explain the benefit of being able to answer such questions using a model</p>	

3.2 A range of ICT tools and techniques

3.2.8 Databases

FE

Subject Content	Learning outcomes	Indicative example(s)
a. Data structures	<ul style="list-style-type: none"> i. Understand the structure of information and the concept of a database as a collection of stored data organised into files or data tables (flat file and relational databases) ii. Understand that relational databases reduce data redundancy 	
b. Collect/enter data to a database	Create and use database input form(s) to enter and edit records	
c. Specific features of a database	Know that the software should allow the use of a range of specific features	Database software features: field (column) and record (row), field names, key field (unique), primary key, file; create a database, insert/delete field/record, enter and edit field contents, organise and select records, view database structure, control the content and format of reports by selection of fields, use of headings, header and footer, managing database facilities using buttons (front end/switchboard and forms), creation and development of charts/graphs
d. Everyday tasks for databases	Organise data, add new data, amend existing data, delete unnecessary data, select/search/filter records, sort on one or more fields and merge data	Sort: in ascending and descending order
e. Data redundancy	Explain how linking data tables can reduce the duplication of data, making it simpler to keep information up to date and increasing the accuracy/consistency of data	
f. Outputs	Explain that data can be extracted from a database to produce many different types of reports and that data from different files in a database can be used to produce a single report	
g. Mail merging	Understand how fields from a database may be included in a variety of documents	Mail merge documents: letter, invoice, payslip, membership card and name badge

3.2 A range of ICT tools and techniques

3.2.9 Web browsing and e-mail

FE

Subject Content	Learning outcomes	Indicative example(s)
a. Web browser and search engine	Understand that to access, navigate and search Internet sources of information purposefully and effectively, the software used should allow these features	Enter web address, web/internet portals, web/internet browser, home page, navigate, refresh, stop, block 'pop-ups', phishing filters, favourites, save and use bookmarks, links to other sources
b. e-mail	Understand that e-mail software used should include features that allow a user to create, access, read and respond appropriately to e-mails	e-mail software features: send and receive messages using mailbox/inbox, outbox, e-mail address, create, access, read, reply, forward e-mails, communicate using – from, send to, cc, bcc, subject and content fields, add and open attachments, add signatures and use appropriate language/style to suit audience Manage junk mail (spam) and use spam filter

3.2.10 Web logs and social networking

FE

Subject Content	Learning outcomes	Indicative example(s)
a. Web logs	Understand the use of web logs	blog
b. Social networking software	Understand the use of social network sites and explain the advantages/disadvantages of using them	

3.2 A range of ICT tools and techniques

3.2.11 Control software

Subject Content	Learning outcomes	Indicative example(s)
Controlling devices	<ul style="list-style-type: none"> i. Write a sequence of instructions to control a screen image or external device appropriately ii. Understand about controlling a range of devices 	Devices controlled: electronic toys, games, actuators, central heating systems, burglar alarms, security systems, automatic doors, smart meters, traffic control systems, car parking systems, greenhouse control systems and robotics

Detailed Content

Section 3.3: Society's use of ICT

Candidates should demonstrate skills in, and show knowledge and understanding of the implications of legal, social, economic, ethical and environmental uses of ICT for individuals, organisations and society. Candidates should recognise risks when using ICT and understand safe, secure and responsible practices.

This section contains:

- 3.3.1 Legal issues
- 3.3.2 Social and economic issues
- 3.3.3 Political, ethical and environmental issues

The same numbering has been used as for the GCSE ICT Full Course so that users of both specifications can see the differences.



3.3 Society's use of ICT

3.3.1 Legal issues

FE

Subject Content	Learning outcomes	Indicative example(s)
<p>a. Preventing unauthorised access</p>	<p>i. Describe a range of software methods of preventing unauthorised access to computer systems/online accounts</p> <p>ii. Understand hacking and explain measures which must be taken in order to protect against hacking</p>	<p>Preventative software measures: creating user accounts, use of authentication and log on details (user IDs/usernames and appropriate passwords), keeping passwords/PINs secret/secure, regular changing of passwords, levels of access, security questions, image/code recognition, selective drop-down menus</p> <p>Anti-hacking measures: firewalls, intrusion detection</p>
<p>b. Preventing misuse</p>	<p>i. Describe what a computer virus is and know the danger it presents</p> <p>ii. Explain the measures which must be taken in order to protect against deliberate transfer of viruses and minimise the risk of viruses</p> <p>iii. Avoid plagiarism and understand its affects on people and acknowledge sources</p> <p>iv. Understand the moral and ethical implication of illegal media downloads and file sharing</p>	<p>Anti-virus measures: anti-virus and anti-spy software and treating files from unknown sources with caution</p>
<p>c. Health and Safety issues at work</p>	<p>i. Describe the potential health problems related to the prolonged use of ICT equipment</p> <p>ii. When using a computer for long periods, understand what steps can be taken to help alleviate or minimise stress, eye problems, wrist problems (RSI), back and neck problems</p>	<p>Health problems: stress, eye problems, wrist problems (RSI), back and neck problems and tripping over cables</p> <p>Alleviating health problems: take breaks, appropriate lighting, eye tests, use of wrist rests and other devices, use adjustable seating and set monitor heights, footstools and other devices, avoid hazards, safe positioning of hardware/potential hazards</p>

3.3 Society's use of ICT

3.3.2 Social and economic issues

Subject Content	Learning outcomes	Indicative example(s)
a. Changing pattern of commerce and industry due to increased use of ICT	Describe the changes to the way businesses work due to the introduction of ICT	Changing commercial patterns: automated production lines with fewer workers and more standard products, automated stock control ensuring stock is kept at correct levels, Internet shopping reducing the necessity for 'high street' shop premises, creation of new 'industries' and globalisation
b. Changing pattern of employment due to increased use of ICT	<ul style="list-style-type: none"> i. Discuss changes caused by increased use of ICT in the workplace ii. Discuss the changes in employment due to the introduction of computers and the increasing use of network technology 	<p>Changing employment patterns 1: size of business/workforce, type of workforce, location of offices/manufacturing plant, different ways of working and different capabilities of people and computers</p> <p>Changing employment patterns 2: homeworking/teleworking, hot desking, mobile computing, flexible hours, job satisfaction, ease of tasks, training, re-training and increased unemployment</p>
c. Responsible behaviour online	<ul style="list-style-type: none"> i. Show awareness of responsible use and staying safe when using ICT-based communication ii. Recognise a range of online hazards and know methods of avoiding them 	<p>Responsible online behaviour: such as nondisclosure of personal information/details, not opening/forwarding e-mails/files from unknown sources; not clicking on 'unknown' web links; not physically meeting a person from a chat room; inappropriate use of web cam, prevention of cyber bullying, not accessing pornography, using copy lists with discrimination, and checking websites have correct URL</p> <p>Online hazards: phishing e-mails/scamming/fraudulent mirror-image (look alike) websites; avoid accidentally sending viruses</p> <p>Online methods: use of online bank card readers and use of financial security procedures</p>

3.3 Society's use of ICT

3.3.2 Social and economic issues (continued)

Subject Content	Learning outcomes	Indicative example(s)
d. Social and personal effects of ICT	<ul style="list-style-type: none"> i. Understand the effects that the growth of personal websites, web logs and social networking sites have on people, organisations and society ii. Describe the effects of variation in computer access and ICT skills between different people 	

3.3.3 Political, ethical and environmental issues

Subject Content	Learning outcomes	Indicative example(s)
Using ICT to monitor and minimise harmful effects on the environment	<ul style="list-style-type: none"> i. Describe the impact that ICT methods of monitoring have, using measurement devices ii. Recognise the effect that low energy use and recycling have on the environment 	<ul style="list-style-type: none"> Record climate and environmental change Ozone layer, land fill sites and smart waste bins

Detailed Content

Section 3.4: Collaborative working

Candidates should demonstrate skills in, and show knowledge and understanding of the impact of collaborative working in ICT for individuals, organisations and society.

This section contains:

- 3.4.1 Principles and processes of collaborative working

The same numbering has been used as for the GCSE ICT Full Course so that users of both specifications can see the differences.



3.4 Collaborative working

3.4.1 Principles and processes of collaborative working

FE

Subject Content	Learning outcomes	Indicative example(s)
<p>a. Collaboration</p>	<p>Understand that collaboration is a recursive process where two or more parties (people, organisations or countries) work together towards meeting common targets</p>	
<p>b. Video/teleconferencing</p>	<p>Understand that video/teleconferencing is an example of collaborative working and is based on two or more locations being able to interact with others via multi-way video/tele and audio transmissions simultaneously</p>	
<p>c. Sharing information and online safety</p>	<p>i. Understand about sharing files, the secure transfer of data and secure access when collaborating</p> <p>ii. Discuss the need, when working collaboratively, to show respect towards others, to comply with data protection regulations, to understand about systems that enable security of data and to understand about remote access to computer systems</p>	<p>File naming conventions and version control Read/write file permissions Safeguards: encryption, firewalls, back-ups and secure sites</p>

3.5 Controlled Assessment of Unit 2

Controlled Assessment (CA) is a form of internal assessment where the control levels for each stage of the assessment process (task setting, task taking and task marking) have been defined by QCDA. These control levels must be applied by all GCSE Awarding Bodies. The control levels which must be applied to GCSE ICT Short Course are as follows:

- Task Setting: High
- Task Taking: Medium
- Task Marking: Medium.

Contextualisation of Unit 2

A high level of control for task setting is required by the QCDA Controlled Assessment criteria. This means that AQA must set the tasks for Unit 2. However, centres are permitted to contextualise one or more tasks if an element of a task needs to be changed to meet the availability of, and access to, an individual centre's resources.

Unit 2 – Controlled Assessment and Marking Criteria

Unit 2 – Task Setting

The Assignment is set by AQA. It will consist of a *Candidate Booklet* providing the description of a situation where the appropriate use of ICT will solve one or more tasks identified to candidates. Candidates are each required to produce a report that will demonstrate their ability to identify requirements, and make appropriate use of ICT in providing solutions which they will analyse, design, implement, test and evaluate.

In September each year, centres will be sent a *Candidate Booklet* (45202/CB), *Data Files* and confidential *Teachers' Notes* (45202/TN) using the e-AQA secure server. Depending upon the nature of the Assignment, in addition to the *Candidate Booklet*, centres will have access to a podcast (or other medium) to download from e-AQA. The podcast (or other medium) will supplement the *Candidate Booklet*. The *Teachers' Notes* will provide guidance on the conduct and marking of the tasks in the Assignment, and general solutions.

The Assignment will be available for examination once a year in June beginning in 2011 and will change each year thereafter. It is therefore the responsibility of the centre to ensure that the correct Assignment is used when preparing candidates.

Unit 2 – Task Taking

Important information about task taking in Controlled Assessment is given in the confidential *Teachers' Notes*. Teachers must read these *Notes* before beginning Unit 2. New *Teachers' Notes* will be published each year to match the new Assignment.

Unit 2 – Task Marking

The marking criteria for Unit 2 are given below. This information with clarifications is given in the *Teachers' Notes*. Further important information about Controlled Assessment task marking is in the *Teachers' Notes*. Teachers' Standardising Meetings will be held each year to discuss the Assignment, its conduct and its marking.

If you have queries about the Assignment, you are encouraged to contact us using *Ask AQA for Teachers* on the AQA Website. Each centre will also be assigned a Controlled Assessment Adviser who will be available to assist centres with any centre-specific matters relating to Unit 2. Contact details of Advisers will be provided when you inform us that you are to use the specification.

**Unit 2
Marking Criteria
Total marks = 100**

- Analysis (10 marks)
- Design (20 marks)
- Implementation (40 marks)
- Testing (10 marks)
- Self Evaluation (8 marks)
- Report (6 marks)
- Evaluation of others' use of ICT (6 marks)

Unit 2 – Marking Criteria

Analysis (10 marks)

The mark scheme for Analysis will change annually according to the nature and content of the tasks. It is based on the number of statements that candidates have to identify and categorise for each task. The

mark scheme is in the confidential *Teachers' Notes* (45202/TN) and must remain confidential until candidates have completed the Analysis for the task(s).

Design (maximum of 20 marks)

There are two elements: planning and design choices.

17–20	Developed a creative planned design, appropriate to the needs of the user and fit for purpose, 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
13–16	Developed a good planned design, with consideration of the needs of the user and mostly fit for purpose, showing how the problem is to be solved Described the design choices made, with some reference to the needs of the user
9–12	Developed a reasonable design, showing how the problem is to be solved Stated design choices made with reference to the problem
5–8	Produced a limited design, with an attempt to show how the problem is to be solved Made limited statements of the design choices
1–4	Produced a very limited design, with a limited attempt to show how the problem is to be solved Made simple statements of the choices
0	Design not tackled

Unit 2 – Marking criteria (continued)

Implementation (maximum of 40 marks)

There are three elements: skill, understanding and efficiency; evidence of the solution; annotation.

33–40	<p>Used the resources and techniques with a high level of skill, understanding and efficiency to produce a solution. Implemented all, or nearly all, the changes resulting from required judgement or testing</p> <p>Produced all, or nearly all, of the evidence of a creative and high quality solution including earlier stages of creation</p> <p>Work is effectively annotated to clearly explain how the solution was produced</p>
25–32	<p>Used the resources and techniques with good skill, understanding and reasonable efficiency to produce a solution. Implemented most changes resulting from required judgement or testing</p> <p>Produced most of the evidence of a suitable solution including earlier stages of creation</p> <p>Work is clearly annotated to describe how the solution was produced</p>
17–24	<p>Used the resources and techniques with some skill and understanding to produce a solution. Implemented some changes resulting from required judgement or testing</p> <p>Produced some evidence of a mostly correct solution including earlier stages of creation</p> <p>Work is mostly annotated to state how the solution was produced</p>
9–16	<p>Used the resources and techniques with limited skill and understanding. Implemented few changes resulting from required judgement or testing</p> <p>Produced limited evidence of a partially correct solution including at least one earlier stage of creation</p> <p>Limited annotation is present to state what has been produced</p>
1–8	<p>Used the resources and techniques with very limited skill and understanding. Implemented very few changes resulting from required judgement or testing</p> <p>Produced very limited evidence of parts of a solution</p> <p>Very limited annotation which makes some reference to what has been produced</p>
0	Implementation not tackled

Unit 2 – Marking criteria (continued)

Testing (maximum of 10 marks)

There are two elements: testing plan and evidence

9–10	An effective testing plan is designed, which: identified all or nearly all data used to check the problem identified all or nearly all expected results Tested against a correct testing plan producing a full record of results which are clearly checked Explained changes needed (if any)
7–8	A reasonable testing plan is designed, which: identified most data used to check the problem identified most expected results Tested against a correct testing plan in most cases producing a record of results which are reasonably checked Described most changes needed (if any)
5–6	A limited testing plan is designed, which: identified some data used to check the problem identified some expected results Attempted to test against the testing plan in some cases producing a record of results Stated some changes needed (if any)
3–4	Partial planning of some testing is present, which: identified EITHER very little data to be used to check the problem OR included very limited expected results Made a limited attempt to test, without reference to a testing plan Attempted to state few changes needed (if any)
1–2	Partial planning of very little testing which: shows a very limited testing plan is present Made a very limited attempt to test, without reference to a testing plan
0	Testing not tackled

Self Evaluation (maximum of 8 marks)

7–8	Presented a high quality evaluation clearly discussing the effectiveness of the solution in some cases, with reference to the desired outcomes/performance criteria
5–6	Presented an effective evaluation describing the effectiveness of the solution in some cases, with reasonable reference to the desired outcomes/performance criteria
3–4	Presented a reasonable evaluation making some reference to the desired outcomes/performance criteria in stating how the solution was produced
1–2	Presented a limited evaluation making limited reference to the desired outcomes/performance criteria in stating that a solution has been produced
0	Evaluation not tackled

Unit 2 – Marking criteria (continued)

Report (maximum of 6 marks)

5–6	Clearly presented a high quality report explaining issues involved and making suitable recommendations
3–4	Presented a reasonable report describing issues involved and making reasonable suggestions
1–2	Presented a limited report stating issues and making at least one limited suggestion
0	Report not tackled

Evaluation of others' use of ICT (maximum of 6 marks)

5–6	Presented a high quality evaluation which makes effective comments about another student's ICT solution as a whole. Effective improvements are recommended to improve the quality of their own work in future
3–4	Presented an effective evaluation which makes reasonable comments about another student's ICT solution as a whole. Reasonable improvements are suggested to improve the quality of their own work in future
1–2	Presented a limited evaluation which makes limited comments about another student's ICT solution. Limited improvements are suggested which may improve the quality of work
0	Evaluation of others' use of ICT not tackled

4 Scheme of Assessment

4.1 Aims and learning outcomes

GCSE courses based on this specification should encourage candidates to:

- be inspired, moved and changed by following a broad, coherent, satisfying and worthwhile course of study. They should help learners to gain an insight into related sectors. They should prepare learners to make informed decisions about further learning opportunities and career choices.

GCSE courses based on this specification should enable candidates to:

- become independent and discerning users of ICT, able to make informed decisions about its use and aware of its implications for individuals, organisations and society
- acquire and apply creative and technical skills, knowledge and understanding of ICT in a range of contexts

- develop ICT-based solutions to solve problems
- develop their understanding of current and emerging technologies and their social and commercial impact
- develop their understanding of the legal, social, economic, ethical and environmental issues raised by ICT
- recognise potential risks when using ICT, and develop safe, secure and responsible practice
- develop the skills to work collaboratively
- evaluate ICT-based solutions.

4.2 Assessment Objectives (AOs)

The assessment units will assess the following assessment objectives in the context of the content and skills set out in Section 3 (Subject Content).

- AO1: Recall, select and communicate their knowledge and understanding of ICT.
- AO2: Apply knowledge, understanding and skills to produce ICT-based solutions.
- AO3: Analyse, evaluate, make reasoned judgements and present conclusions.

Quality of Written Communication (QWC)

In GCSE specifications which require candidates to produce written material in English, candidates must do the following.

- Ensure that text is legible and that spelling, punctuation and grammar are accurate so that meaning is clear.
- Select and use a form and style of writing appropriate to purpose and to complex subject matter.
- Organise information clearly and coherently, using specialist vocabulary when appropriate.

In this specification QWC will be assessed in Units 1 and 2.

Weighting of Assessment Objectives

The table below shows the approximate weighting of each of the Assessment Objectives in the GCSE Short Course units.

Assessment Objectives	Unit weightings (%)		Overall weighting of AOs (%)
	Unit 1	Unit 2	
AO1	15–25	5–15	25–35
AO2	5–15	30–40	40–50
AO3	5–15	10–20	20–30
Overall weighting of units (%)	40	60	100
Functional Elements*	13	40	53

*53% of the GCSE Short Course assessment is allocated to the Functional Elements of ICT.

4.3 National criteria

This specification complies with

- the Subject Criteria for Information and Communication Technology including the rules for Controlled Assessment
- the Code of Practice
- the GCSE Qualification Criteria
- the Arrangements for the Statutory Regulation of External Qualifications in England, Wales and Northern Ireland: Common Criteria
- the requirements for qualifications to provide access to Levels 1 and 2 of the National Qualification Framework.

4.4 Previous learning requirements

There are no previous learning requirements. However, any requirements set for entry to a course based on this specification are at your centre's discretion.

4.5 Access to assessment: diversity and inclusion

GCSEs often need to assess a wide range of competences. This is because they are general qualifications designed to prepare candidates for a wide range of occupations and further study.

The revised GCSE qualification and subject criteria were reviewed to see whether any of the skills or knowledge needed by the subject presented a possible difficulty to any candidates, whatever their ethnic background, religion, sex, age, disability or sexuality. If there were difficulties, the situation was reviewed again to make sure that such tests of

specific competences were only included if they were important to the subject. The findings were discussed with groups who represented the interests of a diverse range of candidates.

Arrangements are made for candidates with special needs to help them access the assessments as long as the competences being tested are not changed. Because of this, most candidates will be able to access any part of the assessment. More details are given in Section 5.4.

5 Administration

5.1 Availability of assessment units and certification

Examinations and certification for this specification are available as follows.

	Availability of units		Availability of certification*
	Unit 1	Unit 2	GCSE Short Course
January 2011			
June 2011	✓	✓	✓
January 2012	✓		✓
June 2012 and after	✓	✓	✓
January 2013 and after	✓		✓

* Note the 40% rule referred to in section 5.2.

5.2 Entries

Please check the current version of **Entry Procedures and Codes** for up-to-date entry procedures. You should use the following entry codes for the units and for certification.

Unit 1 – 45204

Unit 2 – 45202

GCSE Short Course certification – 4521

The 40% terminal rule for GCSE means that 40% of the assessment must be taken in the examination series in which the qualification is awarded. This rule is not dependent on the size of the qualification. Therefore, in this specification, candidates must take **either** Unit 1 **and/or** Unit 2 at the end of the course.

5.3 Private candidates

This specification is not available to private candidates.

5.4 Access arrangements, reasonable adjustments and special consideration

We have taken note of the 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 (www.jcq.org.uk) or you can follow the link from our website (www.aqa.org.uk).

Access arrangements

We can arrange for candidates with special needs to access an assessment. These arrangements must be made **before** the examination. For example, we can produce a Braille paper for a candidate with sight problems.

Reasonable adjustments

An access arrangement which meets the needs of a particular disabled candidate would be a reasonable adjustment for that candidate. For example a Braille paper would be a reasonable adjustment for a Braille reader but not for a candidate who did not read Braille. The Disability Discrimination Act requires us to make reasonable adjustments to remove or lessen any disadvantage affecting a disabled candidate.

Special consideration

We can give special consideration to candidates who have had a temporary illness, injury or serious problem such as death of a relative, at the time of the examination. We can only do this **after** the examination.

The Examinations Officer at the centre should apply online for access arrangements and special consideration by following the e-AQA link from our website (www.aqa.org.uk).

5.5 Examination language

We will only provide units for this specification in English.

5.6 Qualification titles

The qualification based on this specification is:

- AQA GCSE Short Course in Information and Communication Technology.

5.7 Awarding grades and reporting results

The GCSE Short Course qualifications will be graded on an eight-grade scale: A*, A, B, C, D, E, F and G. Candidates who fail to reach the minimum standard for grade G will be recorded as 'U' (unclassified) and will not receive a qualification certificate.

We will publish the minimum raw mark for each grade, for each unit, when we issue candidates' results. We will report a candidate's unit results to your centre in terms of uniform marks and

qualification results in terms of uniform marks and grades.

For each unit, the uniform mark corresponds to a grade as follows.

Unit 1 maximum uniform mark = 80

Unit 2 maximum uniform mark = 120

Unit 1		Unit 2	
Grade	Uniform Mark Range	Grade	Uniform Mark Range
MAX	80	MAX	120
A*	72–79	A*	108–119
A	64–71	A	96–107
B	56–63	B	84–95
C	48–55	C	72–83
D	40–47	D	60–71
E	32–39	E	48–59
F	24–31	F	36–47
G	16–23	G	24–35
U	0–15	U	0–23

5.8 Re-sits and shelf-life of unit results

Unit results remain available to count towards certification within the shelf life of the specification, whether or not they have already been used.

Candidates may re-sit a unit once only. The better result for each unit will count towards the final qualification provided that the 40% rule is satisfied. Candidates may re-sit the qualification an unlimited number of times.

Candidates' grades are based on the work they submit for assessment.

Candidates must take units comprising at least 40% of the total assessment in the series in which they enter for certification.

6 Controlled Assessment administration

The Head of Centre is responsible for making sure that controlled assessment work is conducted in line with our instructions and JCQ instructions.

6.1 Authenticating controlled assessment work

To meet the requirements of Code of Practice, we need the following.

- **Candidates** must sign the Candidate Record Form to confirm that the work they have handed in is their own.
- **Teachers and assessors** must confirm on the Candidate Record Form that the work marked is only that done by that candidate and was conducted in line with the conditions in the specification document (authentication declaration).
- **Centres** must give a mark of zero if candidates cannot confirm the work handed in for assessment is their own.

You should attach the completed Candidate Record Form for each candidate to his or her work. All teachers who have marked the work of any candidate entered for each component must sign the declaration that the work is genuine.

If you have doubts about signing the authentication declaration, you should follow these guidance points.

- If you believe that a candidate had additional assistance and this is acceptable within the guidelines for the relevant specification, you should award a mark which covers only the candidate's achievement without any help. You should sign the authentication declaration and give information on the relevant form.
- If you cannot sign the authentication declaration, the candidate's work cannot be accepted for assessment.

If, during the external moderation process, there is no evidence that the work has been authenticated, we will award a mark of zero.

6.2 Malpractice

You should let candidates know about our malpractice regulations.

Candidates must not:

- submit work that is not their own
- lend work to other candidates
- give other candidates access to, or the use of, their own independently-sourced research material (this does not mean that candidates cannot lend their books to another candidate, but that candidates should be stopped from copying other candidates' research)
- include work copied directly from books, the Internet or other sources without acknowledgement of the source
- hand in work typed or word processed by someone else without acknowledgement.

These actions are considered malpractice, for which a penalty (for example being disqualified from the exam) will be applied.

If malpractice is suspected, your Examinations Officer should be consulted about the procedure to be followed.

Where you suspect malpractice in controlled assessments after the candidate has signed the declaration of authentication, your Head of Centre must submit full details of the case to us at the earliest opportunity. The form JCQ/M1 should be used. Copies of the form can be found on the JCQ website (<http://www.jcq.org.uk>).

Malpractice in controlled assessments discovered prior to the candidate signing the declaration of authentication need not be reported to us, but should be dealt with in accordance with your centre's internal procedures. We would expect you to treat such cases very seriously. Details of any work which is not the candidate's own must be recorded on the Candidate Record Form or other appropriate place.

6.3 Teacher standardising

We will hold a standardising meeting for Unit 2 for teachers each year, usually in the autumn term, for controlled assessment. At these meetings we will provide support in explaining tasks in context and using the marking criteria. If your centre is new to this specification, you must send a representative to one of the meetings. If you have told us you are a new centre, either by sending us an intention to enter or an estimate of entry, or by contacting the subject team, we will invite you to a meeting.

We will also contact centres in the following cases:

- if the moderation of controlled assessment work from the previous year has shown a serious misinterpretation of the controlled assessment requirements
- if a significant adjustment has been made to a centre's marks.

In these cases, you will be expected to send a representative to one of the meetings. If your centre does not fall into one of these categories you can choose whether or not to come to a Standardising Meeting. If you cannot attend and would like a copy of the written materials used at the meeting, you should contact the subject administration team at ict-subjects@aqa.org.uk

6.4 Internal standardising of marking

Centres must have consistent marking standards for all candidates. One person must be responsible for ensuring that work has been marked to the same standard, and they need to sign the Centre Declaration Sheet to confirm that internal standardising has taken place.

Internal standardising may involve:

- all teachers marking some sample pieces of work and identify differences in marking standards

- discussing any differences in marking at a training meeting for all teachers involved in the assessment
- referring to reference and archive material, such as previous work or examples from our teacher standardising meetings.

6.5 Annotation of controlled assessment work

The Code of Practice states that the awarding body must make sure that teachers marking controlled assessments clearly show how the marks have been awarded in line with the marking criteria shown in the specification. The awarding body will provide guidance on how this is to be done at the Teachers' Standardising Meetings. Annotation helps our moderators to see as precisely as possible where the teacher has identified that candidates have met the criteria in the specification.

Annotation could be used in either of the following ways:

- important pieces of evidence commented on in either the margin or in the text
- comments on the work that refer to the assessment criteria.

6.6 Submitting marks and sample work for moderation

The total mark for each candidate must be sent to us and the moderator on the mark forms provided, by Electronic Data Interchange (EDI) or electronically by the date given (see www.aqa.org.uk/deadlines/coursework_deadlines.php).

Our moderator will contact you to let you know which pieces of work must be sent to them as part of the sample (please see Section 7.1 for more guidance on sending in samples).

6.7 Factors affecting individual candidates

You should be able to accept the occasional absence of candidates by making sure they have the chance to make up missed controlled assessments. You may organise an alternative supervised session for candidates who are absent at the time the centre originally arranged.

If work is lost, you must tell us immediately the date it was lost, how it was lost, and who was responsible. Inform our Centre and Candidate Support Services using the JCQ form *Notification of Lost Coursework JCQ/LCW form 15*.

Where special help which goes beyond normal learning support is given, use the Candidate Record Form to inform us so that this help can be taken into account during moderation.

Candidates who move from one centre to another during the course sometimes need additional help to meet the requirements of a scheme of controlled assessment work. How this can be dealt with depends when the move takes place. If it happens early in the course the new centre should be responsible for controlled assessment work. If it happens late in the course it may be possible to arrange for the moderator to assess the work as a candidate who was 'Educated Elsewhere'. Centres should contact us as early as possible for advice about appropriate arrangements in individual cases at ict-subjects@aqa.org.uk

6.8 Keeping candidates' work

From the time the work is marked, your centre must keep the work of all candidates, with Candidate Record Forms attached, under secure conditions, to allow the work to be available during the moderation

period or should there be an Enquiry about Results. You may return the work to candidates after the deadline for Enquiries about Results, or once any enquiry is resolved.

7 Moderation

7.1 Moderation procedures

Controlled assessment work is moderated by inspecting a sample of candidates' work sent (by post or electronically) from the centre to a moderator appointed by us. The centre marks must be sent to us and the moderator by the deadline given (see www.aqa.org.uk/deadlines/coursework_deadlines.php). Centres entering fewer candidates than the minimum sample size (and centres submitting work electronically) should send the work of all of their candidates. Centres entering larger numbers of candidates will be told which candidates' work must be sent as part of the sample sent in for moderation.

Following the re-marking of the sample work, the moderator's marks are compared with the centre

marks to check whether any changes are needed to bring the centre's assessments in line with our agreed standards. In some cases the moderator may need to ask for the work of other candidates in the centre. To meet this request, centres must keep the controlled assessment work and Candidate Record Forms of every candidate entered for the examination under secure conditions, and they must be prepared to send it to us or the moderator when it is requested. Any changes to marks will normally keep the centre's rank order, but where major differences are found, we reserve the right to change the rank order.

Moderation will take place in January and June for Unit 3, and June only for Unit 2.

7.2 Consortium arrangements

If you are a consortium of centres with joint teaching arrangements (where candidates from different centres have been taught together but where they are entered through the centre at which they are on roll), you must tell us by filling in the JCQ/CCA form [Application for Centre Consortium Arrangements for centre-assessed work].

You must choose a consortium coordinator who can speak to us on behalf of all centres in the consortium.

If there are different coordinators for different specifications, a copy of the JCQ/CCA form must be sent in for each specification.

We will allocate the same moderator to each centre in the consortium and the candidates will be treated as a single group for moderation.

7.3 Procedures after moderation

When the results are published, we will give centres details of the final marks for the controlled assessment work.

We will return candidates' work to you after the exam. You will receive a report, at the time results are

issued, giving feedback on any adjustments that were made to your marks.

We may keep some candidates' work for awarding, archive or standardising purposes and will inform you if this is the case.

Appendices

A Grade descriptions

Grade descriptions are provided to give a general indication of the standards of achievement likely to have been shown by candidates who were awarded particular grades. The descriptions should be considered in relation to the content outlined in the specification – they are not designed to define that content.

The grade awarded will depend on how well the candidate has met the assessment objectives (see Section 4). If a candidate has performed less well in some areas this may be balanced by better performances in others.

Grade A

Candidates recall, select and communicate a thorough knowledge and understanding of a broad range of ICT including the impact of its social and commercial use.

They apply knowledge, understanding and skills to a variety of situations, selecting and using a range of ICT tools efficiently to solve problems and produce effective ICT-based solutions. They manipulate and process data efficiently and effectively. They effectively model situations, sequence instructions, interpret information and creatively explore and develop ideas. They work systematically and understand and adopt safe, secure and responsible practices.

They systematically analyse problems, identifying needs and opportunities. They critically analyse and evaluate the way they and others use ICT. They iteratively review their work and make improvements where appropriate. They use ICT to communicate effectively, demonstrating a clear sense of purpose and audience.

Grade C

Candidates recall, select and communicate a good knowledge and understanding of ICT, including the impact of its social and commercial use.

They apply knowledge, understanding and skills in a range of situations, applying ICT tools appropriately to address problems and provide ICT-based solutions. They select information and process data. They model situations, sequence instructions, select and use information, and explore ideas. They work using safe, secure and responsible practices.

They analyse ways of addressing needs using ICT. They review and evaluate the way they and others use ICT. They review their work and make improvements where appropriate. They use ICT to communicate, demonstrating consideration of purpose and audience.

Grade F

Candidates recall, select and communicate a basic knowledge and understanding of aspects of ICT, including its use in the wider world.

They apply limited knowledge, understanding and skills to address simple problems and create basic solutions using ICT tools. They select and present data and information, and use simple models and instructions. They demonstrate some awareness of the need for safe, secure and responsible practices.

They respond to needs using ICT. They sometimes review and provide comments on the way they and others use ICT. They make simple modifications to their work in the light of progress. They use ICT to communicate, demonstrating limited awareness of purpose and audience.

B Spiritual, moral, ethical, social, legislative, sustainable development, economic and cultural issues and health and safety considerations

We have taken great care to make sure that any wider issues (for example, spiritual, moral, ethical, social, legal, sustainable development, economic and cultural issues), including those relevant to the education of students at Key Stage 4, have been taken into account when preparing this specification. They will only form part of the assessment requirements where they are relevant to the specific content of the specification and have been identified in Section 3: Subject Content.

European Dimension

We have taken the 1988 Resolution of the Council of the European Community into account when preparing this specification and associated specimen units.

Environmental Education

We have taken the 1988 Resolution of the Council of the European Community and the Report 'Environmental Responsibility: An Agenda for Further and Higher Education' 1993 into account when preparing this specification and associated specimen units.

Avoiding bias

We have taken great care to avoid bias of any kind when preparing this specification and specimen units.



C Overlaps with other qualifications

There is considerable overlap of skills and content between the units of this specification and the Functional Skills Qualification in ICT at Level 1 and Level 2.

Candidates preparing for this GCSE specification will address Functional Elements of ICT but will not be awarded a qualification for Functional ICT.

The Functional Skills Certificate in ICT is available as a separate, stand-alone qualification.

D Wider Key Skills – Teaching, developing and providing opportunities for generating evidence

Introduction

The Key Skills Qualification requires candidates to demonstrate levels of achievement in the Key Skills of Communication, Application of Number and Information and Communication Technology.

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.

Copies of Key Skills Standards may be downloaded from QCDA's website: www.qcda.gov.uk

The units for each key skill comprise three sections:

- What you need to know
- What you must do
- Guidance.

Candidates following a course of study based on this specification for Information and Communication Technology can be offered opportunities to develop and generate evidence of attainment in aspects of the Key Skills of:

- Communication
- Application of Number

- Information and Communication Technology
- Working with Others
- Improving own Learning and Performance
- 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 units, are provided in the Teachers' Resource Bank for this specification.

The above information is given in the context of the knowledge that Key Skills at Levels 1 and 2 will be available until 2010 with last certification in 2012.

Key Skills Qualifications of Communication, Application of Number and Information and Communication Technology will be phased out and replaced by Functional Skills qualifications in English, Mathematics and ICT from September 2010 onwards. Candidates following a course of study based on this specification for Information and Communication Technology can be offered opportunities to develop and generate evidence of attainment in aspects of the Functional and Key Skills.



E Abbreviations that candidates should know

Abbreviation	Meaning	Abbreviation	Meaning
bcc	Blind Carbon Copy	MIDI	Musical Instrument Digital Interface
Blog	Web Log	MP3	Moving Picture layer 3
cc	Carbon Copy	OCR	Optical Character Recognition
CCTV	Closed Circuit Television	OMR	Optical Mark Recognition
CD-R	Compact Disk Recordable	PDA	Personal Digital Assistant
CD-ROM	Compact Disk ROM	PIN	Personal Identification Number
CD-RW	Compact Disk ReWritable	Podcast	Personal On Demand broadcast
DTP	Desk Top Publishing	RAM	Random Access Memory
DVD-R	Digital Versatile Disk Recordable	ROM	Read Only Memory
DVD-RAM	Digital Versatile Disk RAM	RFID	Radio Frequency Identification
DVD-ROM	Digital Versatile Disk ROM	RSI	Repetitive Strain Injury
DVD-RW	Digital Versatile Disk ReWritable	RSS	Really Simple Syndication
EFTPOS	Electronic Funds Transfer at Point-Of-Sale	Sat Nav	Satellite Navigation System
e-mail	Electronic mail	SMS	Short Message Service
GIS	Geographical Information System	URL	Uniform Resource Location
GPS	Global Positioning System	USB	Universal Serial Bus
HTML	HyperText Mark-up Language	VoIP	Voice over Internet Protocol
ID	Identification	WAN	Wide Area Network
LAN	Local Area Network	WAP	Wireless Application Protocol



GCSE ICT Short Course (4520) from 2010 onwards.

Qualification Accreditation Number: 500/8510/4

Every specification is assigned a national classification code indicating the subject area to which it belongs. The classification code for this specification is 2650.

Centres should be aware that candidates who enter for more than one GCSE qualification with the same classification code will have only one grade counted for the purpose of the School and College Performance Tables. In the case of a candidate taking two qualifications with the same classification code that are of the same size and level, eg two full course GCSEs, the higher grade will count.

Centres may wish to advise candidates that, if they take two specifications with the same classification code, schools and colleges are very likely to take the view that they have achieved only one of the two GCSEs. The same view may be taken if candidates take two GCSE specifications that have different classification codes but have significant overlap of content. Candidates who have any doubts about their subject combinations should check with the institution to which they wish to progress before embarking on their programmes.

To obtain specification updates, access our searchable bank of frequently asked questions, or to ask us a question, register with Ask AQA:

aqa.org.uk/ask-aqa/register

You can also download a copy of the specification and support materials from our website:

aqa.org.uk/ictzone

Free launch meetings are available in 2010 followed by further support meetings through the life of the specification. Further information is available at:

<http://events.aqa.org.uk/ebooking>

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