OCR GCSE in Information and Communication Technology J461

OCR GCSE (Short Course) in Information and Communication Technology J061

specification

version 1 November 2009

ICT TOOLKIT 2010
Making the changes work for you

Why choose OCR GCSE ICT?

More enjoyment

This is an exciting new GCSE ICT specification that includes familiar and popular aspects of previous GCSE ICT specifications.

It will provide learners with fantastic opportunities to work with a variety of technologies, giving them greater choice and making it even more enjoyable for them to study. The qualification has been designed so that learners will be digitally literate, with an up-to-date understanding of the digital world around them.

More flexibility

Learners can enjoy more flexibility. They can demonstrate their skills in a way that suits them best, including an optional computing unit, which introduces the concept of programming as a taster for interested learners. There is also the opportunity to run a short course.

Furthermore, this specification provides good progression to AS and A level ICT for learners who want to continue their study in this fascinating field.

More choice

We've created the course so that, as a centre, you can pick options that best suit your resources and the needs of your learners. So, for example, you might choose to complete the whole qualification via an 'e' route, removing the need for paper-based evidence and freeing your learner and your centre from printing.

In fact, with all the examined units, you have the option of computer-based or paper-based assessment. The controlled assessment units can be submitted electronically through the OCR Repository or via the paper-based option.

The course has also been designed to allow co-teaching with the new Entry Level ICT specification.

Support

We're developing a wide range of resources to ensure there is support for you at every stage of your preparation for the new GCSE ICT 2010 specifications. In developing the support, we are talking to teachers and other key stakeholders to make sure we are offering you the most practical help we can. Below, you will find a brief guide to the support that will be available for you.

- **Specimen assessment materials**
- **Specimen assessment materials (controlled)**
- **Guide to controlled assessment**
- **Guide to curriculum planning for ICT**
- **Teacher's handbook**
- **Sample schemes of work and lesson plans**
- **Candidate-style answers**
- **Options evening leaflet/Parent's Guide**

- **Endorsed publisher partner materials**

OCR / HODDER EDUCATION — Official Publisher Partnership

- **Controlled assessment consultancy**
- **Active Results**
- **Past papers**
- **Interchange**
- **OCR Repository**
- **INSET (free until December 2010)**
- **Continual Professional Development**

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1 Introduction to GCSE ICT

1.1 Overview of OCR GCSE ICT

Unit B061 — *ICT in today's world*

Written paper
or Computer-based test
1 hour – 60 marks
20% of the GCSE
40% of the GCSE Short Course

Written paper:
candidates answer all questions

and

Unit B062 — *Practical applications in ICT*

Controlled assessment
60 marks
30% of the GCSE
60% of the GCSE Short Course

Candidates create an ICT solution using ICT applications

and

Unit B063 — *ICT in context*

Written paper
or Computer-based test
1 hour – 60 marks
20% of the GCSE

Written paper based on pre-release material:
candidates answer all questions

and

Unit B064 — *Creative use of ICT*

Controlled assessment
60 marks
30% of the GCSE

Candidates solve a problem by creating and developing a multimedia solution with appropriate creative elements

or

Unit B065 — *Coding a solution*

Controlled assessment
60 marks
30% of the GCSE

Candidates identify a potential coded solution to a problem and solve using basic programming techniques

Candidates taking the GCSE (Short Course) in ICT J061 will need to complete units B061 and B062.

1.2 What is new in OCR GCSE ICT?

	What stays the same?	What changes?
Structure	• Retains the effective structure of four units - two practical, two written from the legacy ICT A and B specifications. • Short and full courses as per the legacy ICT A and B specifications. • Retains the flexibility in delivery as per the legacy GCSE specifications. • Retains a similar research brief from the legacy ICT B specification for one of the externally assessed units. • Retains a context-based externally assessed unit as in the legacy ICT B specification.	• Optional pathways for the second practical unit to ensure relevance and choice. • A contextualised, externally assessed unit, as a result of teacher feedback. • To suit all teachers and learners, there's now a choice of exciting set tasks for the final practical unit. • More flexibility and future-proofed content and structure. • More focus on the communication elements of ICT. • Units can be taken in any order. • No tiers. • Choice of set task for practical units rather than a broad set context.
Content	• Incorporates popular features from legacy specifications. • Fully supported as per the legacy specifications. • Builds on the previous ICT specifications. • Familiar content allows you to make the most of your centre's resources.	• Exciting changes to content and format. • Content now extended to bring it up to date and to allow for future proofing. • This specification allows for optional pathways such as a gaming solution / website solution, or programming, to maximise teacher and candidate expertise and interests. • More flexibility in choice and focus on practical work. • A context related externally assessed unit based upon a research brief. • Flexibility to allow for future developments and changes in ICT use. • More clarity in content. • Builds on best parts of OCR legacy ICT specifications. • Builds on feedback from teachers.

What stays the same?	What changes?
Assessment • Very similar to the legacy ICT A and ICT B specifications with two externally assessed units. • Second paper based on pre-release material as per the legacy ICT B specification.	• Single tier of entry for all units. • Practical assessment now by banded marking criteria with 'best fit' approach. • Second externally assessed unit based on a set research brief. • Choice of set tasks.

For any questions about the OCR GCSE ICT specification, please call 0300 500 4848.

1.3   Guided learning hours

GCSE ICT requires 120–140 guided learning hours.

GCSE (Short Course) ICT requires 60–70 guided learning hours.

2 Content of GCSE ICT

2.1 Unit B061: *ICT in today's world*

Candidates study a range of ICT systems, as used in the home, at school, and in society. Candidates need to be aware of current and emerging technologies and the impact that advances in technology may have on themselves and others.

2.1.1 ICT systems

Systems

Candidates should have knowledge and understanding of:

- the main components of a computer system: Central Processing Unit (CPU), internal/main memory, backing storage, input and output devices and power supplies
- a range of common applications where microprocessor technology is used: personal computers, mainframe computers, super computers and embedded systems
- the difference between hardware and software.

Hardware

Candidates should have knowledge and understanding of:

- input devices and their appropriate use: keyboards and pads, specialist keyboards, mouse, joystick, tracker ball, touch pad, microphones, remote controls, scanners, digital cameras, webcams, touch screens, readers for bar codes, magnetic stripes and chip and pin, sensors, MIDI instruments
- output devices and their appropriate use: monitor/screens, printers, speakers, head/earphones, digital projectors, plotters, activators
- storage devices and their appropriate use: hard disks, optical storage devices, magnetic tape, drives, flash memory devices
- communication devices and their appropriate use: modems, routers, hubs, network interface cards in fixed and mobile systems
- the advantages and disadvantages of a variety of input, output, storage and communication devices
- user interfaces: human-machine interfaces – graphical, command line, direct neural interface.

Software

Candidates should have knowledge and understanding of:

- systems software: operating systems, utility software, drivers
- applications software: word processors, desktop publishing software, spreadsheets, database management software, multimedia software, slideshow software, web authoring software, photo-editing software, video-editing software, graphics manipulation software, communications software (eg social networking software, chat, instant messaging, web browsers, file transfer and email clients), presentation software, gaming software
- programming software: compilers, debuggers, interpreters, linkers, editors
- appropriate uses of software
- the advantages and disadvantages of different software applications
- the different file types used to support software: image, audio, video, document and executable types.

2.1.2 Exchanging information

Communications

Candidates should have knowledge and understanding of:

- communication services: voice telephones, SMS (text messages), instant messaging, fax, email, chat rooms, forums, bulletin boards, Voice-over-IP (VoIP), video conferencing, advantages and disadvantages of using different methods of communication
- sharing, exchanging and managing information: sharing files (file naming conventions and online safety version control), the secure transfer of data and secure access (read/write permissions)
- the safe and responsible use of communication services: showing respect towards others, complying with data protection regulations, staying safe (disclosure of personal data, using appropriate language, misuse of images)
- communications software: web browsers, email software, messaging and file transfer
- the use of the internet: communication, commerce, leisure and information retrieval
- controlling ICT systems remotely: remote controls, remote access to computer systems
- monitoring and tracking systems: worker monitoring/logging, cookies, key logging, worker call monitoring/recording, electronic consumer surveillance, mobile phone triangulation, automatic number plate recognition, CCTV cameras
- emerging technologies: wireless communication, WiFi, mobile technologies, Bluetooth technology, Geographical Information Systems (GIS), and other emerging connection/communication technologies.

2.1.3 Presenting information

Candidates should have knowledge and understanding of:

- types and purposes of different ways of presenting information: word processing and desktop publishing (DTP) software, slideshow, multimedia and web authoring software
- the use of ICT tools and features/facilities for presenting information with regard to efficiency and quality of work, ease of transfer
- integration between and within software applications: integrating sections from one application into another, charts, tables, original graphics from programs into word processing files.

2.1.4   Manipulating data

Data Management

Candidates should have knowledge and understanding of:

- different data types: alphanumeric, text, numeric (integer, currency, percentages, number of decimal places and fractions), date/time, limited choice (drop-down list, radio buttons, tick lists), object, logical/Boolean (Yes/No, Male/Female) types
- the main issues governing the design of file structures: folders, subfolders, filenames, file types, paths, how encoding affects data entry and retrieval
- the main issues governing the design of data capture methods – advantages and disadvantages of using different data capture and collection methods: forms questionnaires, online forms, chip and PIN, OMR, barcode reader, voice recognition, biometrics, and RFID tags
- validation: range checks, type checks, format checks, presence checks, check digits, parity checks
- verification: batch totals, hash totals, double keying, visual checks.

Data handling software

Candidates should have knowledge and understanding of:

- the features of spreadsheet software: cells, cell references, rows, columns (and their height and width), show row/column labels, enter and edit cell content, key fields, cell gridlines, cell ranges, replication, formatting, merging cells, 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
- the features of modelling software: how a data model may be used to answer 'what if' questions and the benefit of being able to answer such questions using a data model
- the features of database software: 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 of reports by selection of fields and use of headings, control the format of reports (header and footer), creation and development of charts/graphs
- typical tasks for which data handling software can be used: organising data, collecting data, amending existing data, deleting redundant data, select/search/filter records, sort on one or more fields (in ascending and descending order), merging data, report production
- data modelling: 'what if' questions, formulae, functions, variables, modelling different scenarios, verification of results (accuracy and plausibility)
- the use of relational databases and spreadsheets: flatfile vs relational databases
- emerging data handling applications: models for financial forecasting, queuing, weather forecasting, flight simulators, expert systems for decision making.

2.1.5 Keeping data safe and secure

Candidates should have knowledge and understanding of:
- backups and archiving: taking backups of data/programs, keeping information/archives safe, use of backing storage media
- secure and safe practices in the use of ICT: protecting data from accidental destruction, protecting data from deliberate damage
- appropriate User Security methods and devices: user IDs, password, encryption, restricted physical access (eg biometric scans, electronic passes), restricted access to data (eg hierarchy of passwords, access rights, encryption), monitoring (eg transaction logs)
- malicious software and the damage it can cause: viruses, key logging software, other malware
- the procedures users can take to minimise risks of damage caused by malicious software: anti-virus software, firewalls, malware detection
- how to avoid the loss/disclosure of personal data to unauthorised users
- what is meant by data encryption and when and why it is used.

2.1.6 Legal, social, ethical and environmental issues when using ICT

Candidates should have knowledge and understanding of:
- the main aspects of legislation relating to the use of ICT: the computer misuse, data protection, copyright design and patents acts and other legislation as it applies to the use of ICT
- the potential health problems related to the prolonged use of ICT systems: stress, eye problems, wrist problems, Repetitive Strain Injury (RSI), back and neck problems
- the need for good design of user interfaces and their impact on the health of users
- how ICT systems can affect the quality of life experienced by persons with disabilities: screen filters, voice recognition software, text to voice software, customised desktop environments, Braille keyboards, specialist input devices, communication and control device, software accessibility options
- a range of safety issues related to using computers and measures needed for prevention of accidents: taking breaks, appropriate lighting, eye tests, wrist rests and other support devices, adjustable seating, monitor positioning, avoiding hazards, electrical safety measures
- the environmental impact of digital devices: their use, deployment and eventual recycling and disposal
- the social and ethical implications of the electronic transmission of personal information: monitoring/detecting loss or corruption of information, preventing the abuse of personal information, the purpose and costing of national databases, security of public data, links between public and private databases, national identity cards, CCTV, government access to personal data, the surveillance society.

2.1.7 Using ICT systems

How ICT systems are used

Candidates should have knowledge and understanding of:

- the correct procedures to start, access, exit and shutdown ICT systems
- the selection and appropriate adjustment of system settings and user preferences
- the selection and use of the features of user interfaces
- the management of folder structures and files to ensure the safe storage and retrieval of information
- networking: the main types of network, the components and advantages and disadvantages of networked systems.

Troubleshooting

Candidates should have knowledge and understanding of:

- common problems encountered when using ICT systems: software freeze, error dialogues, storage full, paper jams, hardware malfunction
- troubleshooting activities: hardware troubleshooting, software troubleshooting
- the difference between hardware and software problems, and how these can be solved.

2.1.8 Monitoring, measurement and control technology

Candidates should have knowledge and understanding of:

- the different types of sensor and their suitable uses: sensors and actuators for visible, tactile, audible and other physical signals
- the advantages and disadvantages of computerised data logging
- writing a sequence of instructions to control a screen image or external device: light buzzers, sound or turtle, using repeated instructions, procedures and variables
- the use of ICT to control and monitor areas of everyday living: applications that utilise data logging and control, analogue-digital conversion, control and feedback loops and the associated hardware and software.

2.1.9 ICT and modern living

Candidates should have knowledge and understanding of:

- how ICT systems have changed the way people go about their daily lives: communication, shopping, gaming, entertainment, education and training, banking and financial services, social networking, online/remote working, the advantages/benefits and disadvantages/dangers of using ICT/internet
- the impact of emerging technologies on organisations: artificial intelligence, robotics, biometrics, vision enhancement, computer-assisted translation, quantum cryptography, 3D and holographic imaging, 3D printing, virtual reality.

2.2   Unit B062: Practical applications in ICT

Candidates study a range of everyday software applications to be able to manipulate and process data and other information effectively and efficiently and to present information in a format suitable for purpose and audience.

Candidates will select from a range of set tasks written to enable them to demonstrate their practical ICT ability.

2.2.1   Investigating a need

Candidates should be able to demonstrate a practical ability to:

- research a given context documenting sources of information
- analyse systematically the information requirements to solve ICT problems
- think creatively, logically and critically throughout the development process of a set ICT-based solution
- find and select appropriate data and information that is fit for purpose, relevant and accurate
- work effectively with others to gain and share knowledge
- produce a design brief
- produce a system specification with measurable success factors.

2.2.2   Practical use of software tools to produce a working solution

Candidates should be able to demonstrate a practical ability to:

- produce a fully working solution to a chosen set task
- select and use a range of ICT tools and techniques to develop effective solutions
- understand software features and their use
- create sequences of instructions
- manipulate and process data and other information effectively and efficiently
- integrate tools and techniques to work efficiently and to meet user needs
- apply a wide range of tools and techniques across applications to produce ICT-based solutions
- understand and adopt safe, secure and responsible working practices when using ICT.

2.2.3   Practical use of file and data structure to produce a working solution

Candidates should be able to demonstrate a practical ability to:

- use software features
- model situations and data to explore and develop ideas
- enter, develop and format data and information to suit processing purpose and audience
- apply creative and technical skills, knowledge and understanding of ICT tools and methods to import and export data
- check data accuracy and plausibility
- create a suitable data structure for a task.

2.2.4   Present their solution

Candidates should be able to demonstrate a practical ability to:

- use a range of ICT tools and media to communicate data and information effectively and in a form that demonstrates a clear sense of purpose and audience
- understand how information should be interpreted and presented to suit purpose and audience
- present information in ways that are fit for purpose and audience.

2.2.5   Evaluation

Candidates should be able to demonstrate a practical ability to:

- evaluate their own and others' contribution
- test their own solution
- create and review their own ICT-based solution
- review and modify work as it progresses to improve the quality of the ICT-based solution
- evaluate and amend their own solutions to a set problem
- identify strengths and weaknesses
- identify areas to improve and recommend and justify appropriate changes that could be made
- present their evaluation in a relevant, clear, organised, structured and coherent format
- use specialist terms correctly and appropriately.

2.3   Unit B063: ICT in context

Candidates study a range of ICT systems in a business or organisational context. Candidates should be aware of current and emerging technologies and their impact on themselves and on others. The question paper will be based upon pre-release material, relating to specified businesses or organisation(s) and its/their use of ICT. The pre-release material will be available to centres in the September of each year for the following January and June examination series. Candidates are not permitted to take any preparatory work into the examination room. This unit will incorporate and build on the knowledge and understanding gained in units B061 and B062. The pre-release material aims to extend the depth of study by focusing upon how the named organisation could use ICT.

2.3.1   ICT systems

Systems

Candidates should have knowledge and understanding of:
- specialist equipment used by organisations in defined contexts
- a range of commercial applications where microprocessor technology is used
- operating systems and applications software
- mobile, portable, and desktop ICT tools for a variety of tasks
- the fundamental differences between the technologies used and their appropriate commercial use.

Hardware

Candidates should have knowledge and understanding of:
- specialist input, output, storage and communication devices: personal computers, printers/plotters, monitors, netbooks, laptops, notebook computers, palmtops, desktop computers, tablet computers, PDAs and handhelds, WAP and smart mobile phones
- the advantages and disadvantages of a variety of input, output, storage and communication devices within a given context.

Software

Candidates should have knowledge and understanding of:
- different types of specialist software and their uses within organisations: system software, programming software, applications software
- the advantages and disadvantages of different software applications and their use in a defined context.

2.3.2   Networks

Candidates should have knowledge and understanding of:
- the main components of computer networks
- network topologies
- the advantages and disadvantages of using computer networks
- the use of internal and external networks.

2.3.3   Information Knowledge Based Systems (IKBS) and Expert Systems

Candidates should have knowledge and understanding of:
- the purpose of IKBS and Expert Systems and how they are used for diagnostic work and decision making.

2.3.4   Project planning

Candidates should have knowledge and understanding of:
- the way ICT facilitates collaboration and teamwork
- the main stages of the project management/systems lifecycle, including methods and processes used
- how ICT can be used to plan and manage projects
- a range of systems investigation methods
- systems implementation strategies.

2.3.5   Exchanging information

Communications

Candidates should have knowledge and understanding of:
- communication services used in organisations
- how organisations share, exchange and manage information
- sharing, exchanging and managing information with employees and with the wider customer base
- how organisations use the internet
- specialist hardware used in the organisation detailed in the pre-release material
- how developments in technology lead to new forms of communication.

Communications software

Candidates should have knowledge and understanding of:
- the appropriate use of software to communicate information to different audiences
- how organisations use data handling software
- how organisations use a data model
- the use and purpose of communication software for commercial purposes.

2.3.6 Presenting information

Candidates should have knowledge and understanding of:
- the integration of applications to achieve outcomes
- the use of the features of software used by organisations to present information.

2.3.7 Manipulating data

Data management

Candidates should have knowledge and understanding of:
- the purpose and methods of data management used by commercial organisations
- data management tools
- the use of relational databases, spreadsheets and other software used by businesses and organisations.

Data handling software

Candidates should have knowledge and understanding of:
- commonly used features of data handling software and their purpose
- how a data model may be used for project planning and costing.

2.3.8 Legal, social, ethical and environmental issues when using ICT within context

Candidates should have a knowledge and understanding of:
- the main aspects of legislation relating to the use of ICT within a defined context
- the changes in working practices due to the use of ICT within a defined context: advantages (collaborative workers may work from home: home working allows more time to be spent on tasks, reduces travelling costs, and protects the environment due to fewer carbon emissions; allows tailored working conditions) and disadvantages (working from home limits face-to-face contact with colleagues, does not prevent distractions from affecting work, removes regular social interaction with work colleagues, leads to isolation) of home/remote working
- the use of ICT for security, monitoring, surveillance and data security
- environmental issues connected to the production, use and disposal of ICT systems, the effect on natural resources of the creation and use of ICT systems.

2.3.9   Managing data/keeping data safe and secure when using ICT within a given context

Candidates should have knowledge and understanding of:
- appropriate methods that could be used to make backups and archives
- appropriate secure and safe practices that could be used
- appropriate user security methods and devices that could be used: restricted physical access (eg biometric scans, electronic passes), restricted access to data (eg hierarchy of passwords, access rights, encryption), monitoring (eg transaction logs)
- the procedures that could be used to minimise the risks of security breaches
- how data encryption could be used within a defined context
- the need for security of data and personal information when using ICT.

2.3.10   Current and emerging technologies

Candidates should have knowledge and understanding of:
- changes in everyday ICT use
- evolving communication systems and how they affect the way people live
- how emerging technologies affect the way companies and their staff operate and work together: employment patterns, retraining, changes in working practices, teleworking, videoconferencing, remote/home working
- how new and emerging technologies could assist organisations.

2.4 Unit B064: Creative use of ICT

Candidates study a range of creative software applications in order to create a multimedia solution to a given problem. They should be aware of how to analyse the problem as well as the steps needed to design, develop, test and evaluate the solution to the problem.

Candidates will be required to complete a task by creating and developing a multimedia solution with appropriate elements such as:

- sound clips
- video
- animation
- graphics.

Solutions may include but are not limited to:

- a multimedia presentation
- a multimedia website
- a computer game.

The problem will be set by OCR and will require the candidate to create a multimedia solution that combines a number of elements. Candidates will need to provide evidence of the analysis of the problem as well as the design, development, testing and evaluation of the solution. Candidates will take part in group work and their contribution to the group will be assessed. It is expected that a number of skills will be demonstrated, including appropriate editing skills.

Candidates' solutions will be marked against the marking criteria using the 'best fit' approach.

This unit will incorporate and build on knowledge and understanding gained in units B061 and B062.

2.4.1 Analysis

Candidates should be able to:
- identify and assess existing solutions to similar problems
- produce a plan for the development of a multimedia solution
- specify the required hardware and software
- specify the user requirements
- define the success criteria for a solution to a problem.

2.4.2 Design

Candidates should be able to:
- explain how the proposed solution will be fit for purpose
- design individual components of the solution
- design screen layouts
- design the overall solution incorporating navigational aids
- design testing routines.

2.4.3 Development

Candidates should be able to:
- create new, or modify existing, components of a solution
- create screen layouts
- create navigational aids
- create a working solution
- adhere to a prepared plan for their solution.

2.4.4 Testing

Candidates should be able to:
- test the solution they have produced
- have potential users test their solution
- test solutions that other people have produced.

2.4.5 Evaluation

Candidates should be able to:
- use the results of testing and identify the limitations of their solution
- use the results of testing and recommend possible improvements to their solution
- evaluate the solution with regard to purpose
- evaluate the solution with regard to the success criteria
- improve their solution.

2.4.6 Working with others

Candidates should be able to:
- plan work with others, identifying objectives and clarifying responsibilities
- work with others towards achieving given objectives, carrying out tasks to meet their responsibilities
- recommend ways of improving work with others to achieve given objectives.

2.5   Unit B065: *Coding a solution*

There will be an OCR set scenario within which the candidates identify a potential coded solution to a problem using basic programming techniques. The scenario will be sufficiently open to allow a variety of viable solutions. This unit will incorporate and build on the knowledge and understanding gained in units B061 and B062.

2.5.1   Programming techniques

Candidates should be able to:
- identify and use the three basic programming constructs used to control the flow of a program: sequence, select, iterate
- understand and use suitable select statements
- understand and use suitable loops including count and condition controlled loops
- use different data types, including Boolean, String, Integer and Real, appropriately in solutions to problems
- define and use arrays as appropriate when solving problems.

2.5.2   Analysis

Planning the development of a coded solution to a problem.

Candidates should be able to:
- identify the information required to solve a problem
- produce a plan for the development of the solution
- specify the required hardware and software
- define the success criteria for later reference during evaluation
- participate in group work.

2.5.3   Design

Design a coded solution to a problem by developing suitable algorithms and test procedures.

Candidates should be able to:
- describe how the proposed solution will be fit for purpose
- design individual components of the solution
- design input and output formats
- design an overall solution using suitable algorithms
- design testing routines.

2.5.4   Development

Create a coded solution showing how each sub-section is completed and forms part of the whole solution, fully annotating the developed code to explain its function.

Candidates should be able to:

- create a coded solution
- create systems for input to and output from the solution
- create navigational paths and methods
- create a working solution
- adhere to a prepared plan for their solution.

2.5.5   Testing

Test the solution to show functionality and how it matches the design criteria. Identify success and any limitations, describing ways the solution can be improved.

Candidates should be able to:

- test the solution they have produced
- have potential users test their solution
- test solutions that other people have produced.

2.5.6   Evaluation

Candidates should be able to:

- use the results of testing and identify the limitations of their solution
- use the results of testing and recommend possible improvements to their solution
- evaluate the solution with regard to purpose
- evaluate the solution with regard to the success criteria
- improve their solution.

3 Assessment of GCSE ICT

3.1   Overview of the assessment in GCSE ICT – J461

Unit B061:	*ICT in today's world*
20% of the total GCSE 1 hour written paper or Computer-based test 60 marks	Candidates answer **all** questions. This unit is externally assessed.

Unit B062:	*Practical applications in ICT*
30% of the total GCSE Controlled assessment Approx 20 hours 60 marks	Candidates choose **one task** from a list provided by OCR. In addition to the formal 20 hours of controlled assessment, there should also be further teaching time to increase candidates' depth of knowledge and understanding in preparation for the controlled assessment. (Up to 8 hours in research/preparation and up to 12 hours in producing the final outcome.) This unit is internally assessed and externally moderated.

Unit B063:	*ICT in context*
20% of the total GCSE 1 hour written paper based on pre-release material or Computer-based test 60 marks	Candidates answer **all** questions. This unit is externally assessed.

Unit B064:	*Creative use of ICT*
30% of the total GCSE Controlled assessment Approx 20 hours 60 marks	Candidates choose **one task** from a list provided by OCR. In addition to the formal 20 hours of controlled assessment, there should also be further teaching time to increase the candidates' depth of knowledge and understanding in preparation for the controlled assessment. (Up to 8 hours in research/preparation and up to 12 hours in producing the final outcome.) This unit is internally assessed and externally moderated.

Unit B065:	*Coding a solution*
30% of the total GCSE Controlled assessment Approx 20 hours 60 marks	Candidates choose **one task** from a list provided by OCR. In addition to the formal 20 hours of controlled assessment, there should also be further teaching time to increase the candidates' depth of knowledge and understanding in preparation for the controlled assessment. (Up to 8 hours in research/preparation and up to 12 hours in producing the final outcome.) This unit is internally assessed and externally moderated.

Candidates taking the GCSE (Short Course) in ICT J061 will need to be entered for units B061 and B062.

3.2   Tiers

This scheme of assessment is untiered, covering all of the ability range grades from A* to G. Candidates achieving less than the minimum mark for Grade G will be ungraded.

3.3   Assessment objectives

Candidates are expected to demonstrate the following in the context of the content described:

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

AO weightings – GCSE ICT

The relationship between the units and the assessment objectives of the scheme of assessment is shown in the following grid:

Unit	% of GCSE			Total
	AO1	A02	A03	
Unit B061: *ICT in today's world*	11	7	2	**20**
Unit B062: *Practical applications in ICT*	4	17	9	**30**
Unit B063: *ICT in context*	11	7	2	**20**
Unit B064: *Creative use of ICT* Unit B065: *Coding a solution*	4	17	9	**30**
Total	**30**	**48**	**22**	**100**

AO weightings – GCSE (Short Course) ICT

The relationship between the units and the assessment objectives of the scheme of assessment is shown in the following grid:

Unit	% of GCSE			Total
	AO1	A02	A03	
Unit B061: *ICT in today's world*	22	14	4	**40**
Unit B062: *Practical applications in ICT*	8	34	18	**60**
Total	**30**	**48**	**22**	**100**

3.4   Grading and awarding grades

Both GCSE (Short Course) and GCSE results are awarded on the scale A* to G. Units are awarded a* to g. Grades are indicated on certificates. However, results for candidates who fail to achieve the minimum grade (G or g) will be recorded as *unclassified* (U or u) and will **not** be certificated.

Both GCSE (Short Course) and GCSE are unitised schemes. Candidates can take units across several different series provided the terminal rules are satisfied. They can also re-sit units or choose from optional units available. When working out candidates' overall grades OCR needs to be able to compare performance on the same unit in different series when different grade boundaries have been set, and between different units. OCR uses a Uniform Mark Scale to enable this.

A candidate's uniform mark for each unit is calculated from the candidate's raw marks on that unit. The raw mark boundary marks are converted to the equivalent uniform mark boundary. Marks between grade boundaries are converted on a pro rata basis.

When unit results are issued, the candidate's unit grade and uniform mark are given. The uniform mark is shown out of the maximum uniform mark for the unit, eg 40/60.

The specification is graded on a Uniform Mark Scale. The uniform mark thresholds for each of the assessments are shown below:

GCSE Unit Weighing	Maximum unit uniform mark	Unit Grade								
		a*	a	b	c	d	e	f	g	u
20%	60	54	48	42	36	30	24	18	12	0
30%	90	81	72	63	54	45	36	27	18	0

A candidates' uniform marks for each unit are aggregated and grades for the specification are generated on the following scale:

Qualification	Maximum uniform mark	Qualification Grade								
		A*	A	B	C	D	E	F	G	U
GCSE (Short Course)	150	135	120	105	90	75	60	45	30	0
GCSE	300	270	240	210	180	150	120	90	60	0

The written papers will have a total weighting of 40% and the Controlled Assessment tasks a weighting of 60%.

A candidate's uniform mark for each paper will be combined with the uniform mark for the Controlled Assessment to give a total uniform mark for the specification. A candidate's grade will be determined by the total uniform mark.

3.5 Grade descriptions

Grade descriptions are provided to give a general indication of the standards of achievement likely to have been shown by candidates awarded particular grades. The descriptions must be interpreted in relation to the content 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 overall. Shortcomings in some aspects of the assessment may be balanced by better performance in others.

The grade descriptors have been produced by the regulatory authorities in collaboration with the awarding bodies.

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.

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 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.

3.6   Quality of written communication

Quality of written communication is assessed in all units.

Candidates are expected to:

- ensure that text is legible and that spelling, punctuation and grammar are accurate so that meaning is clear
- present information in a form that suits its purpose
- use a suitable structure and style of writing.

3.7   Computer-based tests

Computer-based tests will be available for units B061 and B063 from June 2011.

Please use the information in Appendix B to ensure that the centre has the technical capability to administer the computer-based tests required for this specification. **Please note that it is the responsibility of the Head of Centre to ensure that the centre is appropriately equipped to administer the tests in terms of system requirements and venue requirements.** The Exams Officer within the centre is responsible for the conduct of the computer-based tests within the bounds of the Instructions for the Conduct of Examinations issued by the Joint Council for Qualifications.

Any queries concerning computer-based tests should be directed to etest@ocr.org.uk

Centres are not required to use computer-based tests. A paper version of each question paper will also be available.

This section provides general guidance on controlled assessment: what controlled assessment tasks are, when and how they are available; how to plan and manage controlled assessment; and what controls must be applied throughout the process. Detailed guidance relating to controlled assessment is given in the JCQ document 'Instructions for conducting controlled assessments'. More specific guidance and support is provided in the Guide for Controlled Assessment in GCSE ICT, available on the OCR website (www.ocr.org.uk).

4.1   Controlled assessment tasks

All controlled assessment tasks are set by OCR.

Controlled assessment tasks will be available from Interchange from 1 June and will be reviewed every two years. Guidance on how to access controlled assessment tasks from Interchange is available on the OCR website (www.ocr.org.uk).

Centres must ensure that candidates undertake a task applicable to the correct year of the examination by checking carefully the examination dates of the tasks on Interchange.

The candidate can complete the research phase in a group with limited teacher supervision. The carrying out of the task must be completed individually and under direct supervision. The teacher must be able to authenticate the work.

Feedback to the candidate will be permissible but tightly defined. Within this specification, OCR expects teachers to equip the candidate with the knowledge, understanding and skills before they begin the controlled assessment task. It should be remembered that candidates are required to reach their own judgements and conclusions without any guidance or assistance. When supervising the controlled assessment task, teachers are expected to:

- offer candidates advice on how best to prepare for the research/data collection elements of this unit. Additional guidance may be provided if necessary, and this should be reflected in the marks given for the research part of the task
- exercise continuing supervision of work in order to monitor progress and to prevent plagiarism
- exercise continuing supervision of practical work to ensure essential compliance with Health and Safety requirements
- ensure that the work is completed in accordance with the specification requirements and can be assessed in accordance with the specified marking criteria and procedures.

It is the responsibility of the Head of Centre to ensure that the controls set out in the specification and the individual units are imposed.

4.2   Planning and managing controlled assessment

Controlled assessment tasks are available at an early stage to allow planning time. It is anticipated that candidates will spend a total of about 20 hours in producing the work for each unit. Candidates should be allowed sufficient time to complete the tasks.

Suggested steps and timings are included below, with guidance on regulatory controls at each step of the process. Teachers must ensure that control requirements indicated below are met throughout the process.

4.2.1   Preparation and research time

The controlled assessment tasks should be completed within the suggested time limit (see section 3.1) and supervised and marked by the teacher.

- Introduction to the task (teacher led): **1 hour.**

Includes choice of tasks, possible approaches and preparation, time allocations, programmes of work and deadlines, methods of working, control requirements.

- Preparation/research/collection of evidence: **8 hours.**

In the preparation/research stage/collection of evidence, a low level of control is required, which means that candidates can undertake this part of the process without direct teacher supervision and outside the centre as required. Candidates are also able to work in collaboration during this stage. **However, when producing their final piece of work, candidates must complete and evidence all work individually.** With all internally assessed work, the teacher must be satisfied that the work submitted for assessment is the candidate's own work and they should be able to authenticate it using the specified procedure.

During the preparation/research/collection of evidence phase candidates can be given support and guidance. Teachers can explain the task, advise on how the task could be approached, give advice on available resources and alert the candidate to key things that must be included in their final piece of work.

Access to resources will be limited to those appropriate to the controlled assessment task. Candidates will need to be provided with the most appropriate materials and equipment to allow them full access to the marking criteria, but this must be closely monitored and supervised.

Research material may include internet- or paper-based research, interviews, questionnaires, audio and video files. Candidates must be guided on the use of information from other sources to ensure that confidentiality and intellectual property rights are maintained at all times. It is essential that any material directly used from a source is appropriately and rigorously referenced.

4.2.2   Producing the final piece of work

The final piece of work is produced in the centre under controlled conditions, which means under direct teacher supervision. It is expected that the production of the final outcome for each unit will take approximately 12 hours. Teachers must be able to authenticate the work and there must be acknowledgement and referencing of any sources used.

During the carrying out of the task, candidates may have access to the notes which they have made during the research/data collection phase of task taking. It is the responsibility of the centre to ensure that these are indeed research notes and do not include a draft or final version of the task.

When supervising tasks, teachers are expected to:

- exercise continuing supervision of work in order to monitor progress and to prevent plagiarism
- exercise continuing supervision of practical work to ensure essential compliance with Health and Safety requirements
- ensure that the work is completed in accordance with the specification requirements and can be assessed in accordance with the specified marking criteria and procedures.

Teachers must not provide templates, model answers or feedback on drafts. Candidates must work independently to produce their own final piece of work.

4.2.3 Presentation of the final piece of work

Candidates must observe certain procedures in the production of controlled assessment tasks.

• Tables, graphs and spreadsheets may be produced using appropriate ICT. These should be inserted into the report at the appropriate place.

• Any copied material must be suitably acknowledged.

• Quotations must be clearly marked and a reference provided wherever possible.

• Work submitted for moderation must be marked with the:
  – centre number
  – centre name
  – candidate number
  – candidate name
  – unit code and title
  – assignment title

Work submitted on paper for moderation or marking must be secured by treasury tags. Work submitted in digital format (CD or via the OCR Repository) must be in a suitable file structure as detailed in Appendix A at the end of this specification.

4.3 Marking and moderating controlled assessment

All controlled assessed units are marked by the centre assessor(s) using OCR marking criteria and guidance and are moderated by the OCR-appointed moderator. External moderation is either postal moderation or e-moderation where evidence in a digital format is supplied.

4.3.1 Applying the assessment criteria

The starting point for marking the tasks is the marking criteria. These contain levels of criteria for the skills, knowledge and understanding that the candidate is required to demonstrate.

4.3.2 Use of 'best fit' approach to marking criteria

The assessment task for each unit should be marked by teachers according to the given marking criteria within the relevant unit using a 'best fit' approach. For each of the assessment objectives/criteria, teachers select one of the three band descriptors provided in the marking grid that most closely describes the quality of the work being marked.

Marking should be positive, rewarding achievement rather than penalising failure or omissions. The award of marks **must be** directly related to the marking criteria.

Teachers use their professional judgement in selecting the band descriptor that best describes the work of the candidate.

To select the most appropriate mark within the band descriptor, teachers should use the following guidance:

- where the candidate's work convincingly meets the statement, the highest mark should be awarded
- where the candidate's work adequately meets the statement, the most appropriate mark in the middle range should be awarded
- where the candidate's work just meets the statement, the lowest mark should be awarded

Teachers should use the full range of marks available to them and award full marks in any band for work that fully meets that descriptor. This is work that is 'the best one could expect from candidates working at that level'. Where there are only two marks within a band the choice will be between work which meets the statement in most respects and work that just meets the statement. For wider mark bands the marks on either side of the middle mark(s) for 'adequately met' should be used where the standard is lower or higher than 'adequate' but not the highest or lowest mark in the band.

Only one mark per assessment objective/criteria will be entered. The final mark for the candidate for the controlled assessment unit is out of a total of 60 and is found by totalling the marks for each of the marking objective/criteria strands.

4.3.3   Authentication of work

Teachers must be confident that the work they mark is the candidate's own. This does not mean that a candidate must be supervised throughout the completion of all work but that the teacher must exercise sufficient supervision, or introduce sufficient checks, to be in a position to judge the authenticity of the candidate's work.

Wherever possible, the teacher should discuss work-in-progress with candidates. This will not only ensure that work is under way in a planned and timely manner but will also provide opportunities for assessors to check the authenticity of the work and provide general feedback.

Candidates must not plagiarise. Plagiarism is the submission of another's work as one's own and/or failure to acknowledge the source correctly. Plagiarism is considered to be malpractice and could lead to the candidate being disqualified. Plagiarism sometimes occurs innocently when candidates are unaware of the need to reference or acknowledge their sources. It is therefore important for centres to ensure that candidates understand that the work they submit must be their own and that they understand the meaning of plagiarism and what penalties may be applied. Candidates may refer to research, quotations or evidence but they must list their sources. The rewards from acknowledging sources, and the credit they will gain from doing so, should be emphasised to candidates as well as the potential risks of failing to acknowledge such material. Candidates may be asked to sign a declaration to this effect. Centres should reinforce this message to ensure candidates understand what is expected of them.

Please note: Centres must confirm to OCR that the evidence produced by candidates is authentic. The Centre Authentication Form includes a declaration for assessors to sign and is available from the OCR website www.ocr.org.uk and Interchange https://interchange.ocr.org.uk

4.3.4   Internal standardisation

It is important that all internal assessors who are working in the same subject area, work to common standards. Centres must ensure that the internal standardisation of marks across assessors and teaching groups takes place using an appropriate procedure.

This can be done in a number of ways. In the first year, reference material and OCR training meetings will provide a basis for centres' own standardisation. In subsequent years, this, or centres' own archive material, may be used. Centres are advised to hold preliminary meetings of staff involved to compare standards by cross-marking a small sample of work. After most marking has been completed, a further meeting at which work is exchanged and discussed will enable final adjustments to be made.

4.3.5   Moderation

All work for controlled assessment is marked by the teacher and internally standardised by the centre. Marks are then submitted to OCR, after which moderation takes place in accordance with OCR procedures: refer to the OCR website for submission dates of the marks to OCR. The purpose of moderation is to ensure that the standard of the award of marks for work is the same for each centre and that each teacher has applied the standards appropriately across the range of candidates within the centre.

The sample of work that is presented to the Moderator for moderation must show how the marks have been awarded in relation to the marking criteria.

Each candidate's work should have a cover sheet attached to it with a summary of the marks awarded for the task. If the work is to be submitted in digital format, this cover sheet should also be submitted electronically within each candidate's files.

4.4 Submitting the moderation samples via the OCR Repository

The OCR Repository allows centres to submit moderation samples in electronic format.

The OCR GCSE ICT units B062, B064 and B065 can be submitted electronically to the OCR Repository via Interchange: please check Section 7.2.1 for unit entry codes for the OCR Repository.

Instructions for how to upload files to OCR using the OCR Repository can be found on OCR Interchange and in the Guide to Controlled Assessment for GCSE ICT available from the OCR website.

There should be clear evidence that work has been attempted and some work produced. If a candidate submits no work for an internally assessed component, then the candidate should be indicated as being absent from that component on the mark sheets submitted to OCR. If a candidate completes any work at all for an internally assessed component, then the work should be assessed according to the internal assessment objectives and marking instructions and the appropriate mark awarded, which may be zero.

5.1   Free resources available from the OCR website

The following materials will be available on the OCR website www.ocr.org.uk

*   GCSE ICT Specification
*   Specimen assessment materials for each unit, including sample computer-based tests
*   Guide to Controlled Assessment
*   Teacher's Handbook
*   Sample Schemes of Work and Lesson Plans for each unit.

5.2   Other resources

OCR offers centres a wealth of high quality published support with a fantastic choice of 'Official Publisher Partner' and 'Approved Publication' resources, all endorsed by OCR for use with OCR specifications.

OCR works in close collaboration with three Publisher Partners – Hodder Education, Heinemann and Oxford University Press (OUP) – to ensure centres have access to:

*   published support, available when it is needed, tailored to OCR specifications
*   high quality resources produced in consultation with OCR subject teams, which are linked to OCR's teacher support materials
*   more resources for specifications with lower candidate entries
*   materials that are subject to a thorough quality assurance process to achieve endorsement.

Hodder Education is the publisher partner for OCR GCSE ICT.

OCR still endorses other publisher materials, which undergo a thorough quality assurance process to achieve endorsement. By offering a choice of endorsed materials, centres can be assured of high quality support for all OCR qualifications.

5.3   Training

OCR is providing a comprehensive programme of (training) events to support the delivery and assessment of GCSE ICT. They are designed to give you a taste of our new specifications direct from the experts, providing useful information and an opportunity to chat with our team. To search for details of courses near you and to book your place, please visit www.ocr.org.uk/eventbooker

5.4   OCR support services

Active Results is available to all centres offering OCR's GCSE ICT specifications.

activeresults

Active Results is a free results analysis service to help teachers review the performance of individual candidates or whole schools.

Devised specifically for the UK market, data can be analysed using filters on several categories such as gender and other demographic information, as well as providing breakdowns of results by question and topic.

Active Results allows you to look in greater detail at your results:

• richer and more granular data will be made available to centres including question level data available from e-marking

• you can identify the strengths and weaknesses of individual candidates and your centre's cohort as a whole

• our systems have been developed in close consultation with teachers so that the technology delivers what you need.

Further information on Active Results can be found on the OCR website.

OCR ICT support team

A direct number gives access to a dedicated and trained support team handling all queries relating to GCSE ICT - 0300 500 4848.

OCR Interchange

OCR Interchange has been developed to help you to carry out day-to-day administration functions online, quickly and easily. The site allows you to register and enter candidates online. In addition, you can gain immediate and free access to candidate information at your convenience. Sign up at

https://interchange.ocr.org.uk

6.1 Disability Discrimination Act information relating to GCSE ICT

GCSEs often require assessment of a broad range of competences. This is because they are general qualifications and, as such, prepare candidates for a wide range of occupations and higher level courses.

The revised GCSE qualifications and subject criteria were reviewed by the regulators in order to identify whether any of the competences required by the subject presented a potential barrier to any disabled candidates. If this was the case, the situation was reviewed again to ensure that such competences were included only where they were essential to the subject. The findings of this process were discussed with disability groups and with disabled people.

Reasonable adjustments are made for disabled candidates in order to enable them to access the assessments and to demonstrate what they know and what they can do. For this reason, very few candidates will have a complete barrier to the assessment. Information on reasonable adjustments is found in *Regulations and Guidance Relating to Candidates who are Eligible for Adjustments in Examinations* produced by the Joint Council (www.jcq.org.uk)

Candidates who are unable to access part of the assessment, even after exploring all possibilities through reasonable adjustments, may still be able to receive an award based on the parts of the assessment they have taken.

The access arrangements permissible for use in this specification are in line with QCDA's GCSE subject criteria equalities review and are as follows:

	Yes/No	Type of assessment
Readers	Yes	All written and practical assessments
Scribes	Yes	All written and practical assessments
Practical assistants	Yes	For written assessments only. The practical assistant may switch on the computer and insert a disk at the candidate's instruction but must not perform any skill for which marks are credited.
Word processors	Yes	All written and practical assessments
Transcripts	Yes	All written and practical assessments
BSL interpreters	Yes	All written and practical assessments
Oral language modifiers	Yes	All written and practical assessments
MQ papers	Yes	All written and practical assessments
Extra time	Yes	All written and practical assessments

6.2 Arrangements for candidates with particular requirements

All candidates with a demonstrable need may be eligible for access arrangements to enable them to show what they know and can do. The criteria for eligibility for access arrangements can be found in the JCQ document *Access Arrangements, Reasonable Adjustments and Special Consideration.*

Candidates who have been fully prepared for the assessment but who have been affected by adverse circumstances beyond their control at the time of the examination may be eligible for special consideration. Centres should consult the JCQ document *Access Arrangements, Reasonable Adjustments and Special Consideration.*

7.1   Availability of assessment

There are two examination series each year: January and June. GCSE units will be assessed from 2011.

Assessment availability can be summarised as follows:

	Unit B061	Unit B062	Unit B063	Unit B064	Unit B065	GCSE (Short Course) Certification availability	GCSE Certification availability
January 2011	✓	✓	✓	✓	✓	–	–
June 2011	✓	✓	✓	✓	✓	✓	–
January 2012	✓	✓	✓	✓	✓	✓	–
June 2012	✓	✓	✓	✓	✓	✓	✓
January 2013	✓	✓	✓	✓	✓	✓	✓
June 2013	✓	✓	✓	✓	✓	✓	✓

GCSE (Short Course) certification is available for the first time in June 2011, and each January and June thereafter.

GCSE certification is available for the first time in June 2012, and each January and June thereafter.

7.2   Making entries

7.2.1   Making unit entries

Centres must be registered with OCR in order to make any entries, including estimated entries. It is recommended that centres apply to OCR to become a registered centre well in advance of making their first entries. Centres must have made an entry for a unit in order for OCR to supply the appropriate forms and/or moderator details for controlled assessment.

It is **essential** that unit entry codes are quoted in all correspondence with OCR.

Candidates must be entered for either component 01 or 02 for each unit. Centres must enter all of their candidates for ONE of the components. It is NOT possible for centres to offer both components within the same series.

Unit entry code	Component code	Assessment method	Unit title
B061A	01	Computer-based test	*ICT in today's world*
B061B	02	Written paper	
B062A	01	Moderated via OCR Repository	*Practical applications in ICT*
B062B	02	Moderated via postal moderation	
B063A	01	Computer-based test	*ICT in context*
B063B	02	Written paper	
B064A	01	Moderated via OCR Repository	*Creative use of ICT*
B064B	02	Moderated via postal moderation	
B065A	01	Moderated via OCR Repository	*Coding a solution*
B065B	02	Moderated via postal moderation	

7.2.2   Qualification entries

Candidates must enter for qualification certification separately from unit assessment(s). If a certification entry is not made, no overall grade can be awarded.

Candidates may enter for:

- GCSE (Short Course) certification J061
- GCSE certification J461.

A candidate who has completed all the units required for the qualification must enter for certification in the same examination series in which the terminal rules are satisfied.

GCSE (Short Course) certification is available from June 2011.

GCSE certification is available from June 2012.

7.3   Terminal rule

Candidates must take at least 40% of the overall assessment in the same series they enter for the qualification certification. This 40% of assessment will contribute to the candidate's final grade.

7.4   Unit and qualification re-sits

Candidates may re-sit each unit once before entering for certification for a GCSE.

Candidates may enter for the qualification an unlimited number of times.

7.5   Enquiries about results

Under certain circumstances, a centre may wish to query the result issued to one or more candidates. Enquiries about results for GCSE units must be made immediately following the series in which the relevant unit was taken (by the Enquiries about Results deadline).

Please refer to the *JCQ Post-Results Services* booklet and the *OCR Admin Guide* for further guidance about action on the release of results. Copies of the latest versions of these documents can be obtained from the OCR website.

7.6   Shelf-life of units

Individual unit results, prior to certification of the qualification, have a shelf-life limited only by that of the qualification.

7.7   Prohibited qualifications and classification code

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 (the highest) counted for the purpose of the School and College Performance Tables.

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 seek advice, for example from their centre or the institution to which they wish to progress.

8 Other information about GCSE ICT

8.1 Overlap with other qualifications

This qualification includes an optional unit that allows candidates to carry out some computer programming. There is consequently an overlap with OCR's GCSE in Computing. These are, however, distinct qualifications and the optional programming unit within this ICT qualification does not appear within the OCR Computing specification. Candidates may wish to take both specifications.

There are a number of other qualifications that share some common content with this specification, but which have distinct purposes and contexts. OCR's Level 1 and 2 Nationals in ICT provide accreditation for ICT skills with a greater emphasis on the practical, rather than the theoretical. OCR's Principal Learning qualifications in IT at Levels 1 and 2 (which can form part of the Levels 1 and 2 Diplomas in IT) provide a more contextualised, applied and business-focused approach to IT. OCR also offers a range of IT qualifications aimed specifically at skills for the workplace, such as iMedia, ITQ, CLAIT and iPro. Centres are encouraged to consult the OCR website in order to identify the best ICT qualification for their particular candidates.

8.2 Progression from this qualification

GCSE qualifications are general qualifications that enable candidates to progress either directly to employment or to proceed to further qualifications.

Progression to further study from GCSE will depend upon the number and nature of the grades achieved. Broadly, candidates who are awarded mainly Grades D to G at GCSE could either strengthen their base through further study of qualifications at Level 1 within the National Qualifications Framework or could proceed to Level 2. Candidates who are awarded mainly Grades A* to C at GCSE would be well prepared for study at Level 3 within the National Qualifications Framework.

8.3 Avoidance of bias

OCR has taken great care in preparation of this specification and assessment materials to avoid bias of any kind.

8.4 Code of Practice/Common criteria requirements/Subject criteria

This specification complies in all respects with the current *GCSE, GCE and AEA Code of Practice* as available on the QCA website, *The Statutory Regulation of External Qualifications 2004,* and the subject criteria for GCSE Information and Communication Technology.

8.5 Language

This specification and associated assessment materials are in English only.

8.6   Spiritual, moral, ethical, social, legislative, economic and cultural issues

The short course specification offers opportunities that can contribute to an understanding of these issues in the following topics:

Issue	Opportunities for developing an understanding of the issue during the course
Spiritual issues	Unit B061 Section 2.1.9
Moral issues	Unit B061 Sections 2.1.1; 2.1.2; 2.1.5; 2.1.6; 2.1.9 Unit B062 Sections 2.2.1; 2.2.2; 2.2.5
Ethical issues	Unit B061 Section 2.1.6
Social issues	Unit B061 Sections 2.1.6; 2.1.8; 2.1.9 Unit B062 Sections 2.2.1; 2.2.2
Legislative issues	Unit B061 Section 2.1.6
Economic issues	Unit B061 Section 2.1.9
Cultural issues	Unit B061 Section 2.1.9

The full course specification offers opportunities which can contribute to an understanding of these issues in the following topics:

Issue	Opportunities for developing an understanding of the issue during the course
Spiritual issues	Unit B061 Section 2.1.9 Unit B063 Section 2.3.8 and 2.3.10
Moral issues	Unit B061 Sections 2.1.1; 2.1.2; 2.1.5; 2.1.6; 2.1.9 Unit B062 Sections 2.2.1; 2.2.2; 2.2.5 Unit B063 Sections 2.3.8; 2.3.9; 2.3.10
Ethical issues	Unit B061 Section 2.1.6 Unit B063 Section 2.3.8
Social issues	Unit B061 Sections 2.1.6; 2.1.8; 2.1.9 Unit B062 Sections 2.2.1; 2.2.2 Unit B063 Sections 2.3.4; 2.3.5; 2.3.8; 2.3.10 Unit B064 Section 2.4.6 Unit B065 Section 2.5.6
Legislative issues	Unit B061 Section 2.1.6 Unit B063 Section 2.3.8
Economic issues	Unit B061 Section 2.1.9 Unit B063 Section 2.3.8
Cultural issues	Unit B061 Section 2.1.9 Unit B063 Sections 2.3.8; 2.3.10

8.7 Sustainable development, health and safety considerations and European developments, consistent with international agreements

The short course specification supports these issues, consistent with current EU agreements, as outlined below.

Issue	Opportunities for developing an understanding of the issue during the course
Sustainable development	Unit B061 Section 2.1.6
Health and safety considerations	Unit B061 Sections 2.1.2; 2.1.6, Unit B062 Section 2.2.2
European developments	Unit B061 Sections 2.1.5; 2.1.6

The full course specification supports these issues, consistent with current EU agreements, as outlined below.

Issue	Opportunities for developing an understanding of the issue during the course
Sustainable development	Unit B061 Section 2.1.6 Unit B063 Section 2.3.1
Health and safety considerations	Unit B061 Sections 2.1.2; 2.1.6 Unit B062 Section 2.2.2 Unit B063 Section 2.3.9 Unit B064 Section 2.4.2 Unit B065 Section 2.5.3
European developments	Unit B061 Sections 2.1.5 and 2.1.6 Unit B063 Section 2.3.8

8.8   Key Skills

This specification provides opportunities for the development of the Key Skills of *Communication, Application of Number, Information Technology, Working with Others, Improving Own Learning and Performance and Problem Solving* at Levels 1 and/or 2. However, the extent to which this evidence fulfils the Key Skills criteria at these levels will be totally dependent on the style of teaching and learning adopted for each unit.

The following table indicates where opportunities may exist for at least some coverage of the various Key Skills criteria at Levels 1 and/or 2 for each unit.

Unit	C		AoN		IT		WwO		IoLP		PS	
	1	2	1	2	1	2	1	2	1	2	1	2
B061	✓	✓	✓	✓	✓	✓						
B062	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
B063	✓	✓	✓	✓	✓	✓						
B064	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
B065	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Detailed opportunities for generating Key Skills evidence through this specification are posted on the OCR website (www.ocr.org.uk). A summary document for Key Skills Coordinators has been published, showing ways in which opportunities for Key Skills arise within GCSE courses.

Structure for evidence

A controlled assessment portfolio is a collection of folders and files containing the candidate's evidence. Folders should be organised in a structured way so that the evidence can be accessed easily by a teacher or moderator. This structure is commonly known as a folder tree. It would be helpful if the location of particular evidence is made clear by naming each file and folder appropriately and by use of an index called 'Home Page'.

There should be a top level folder detailing the candidate's centre number, candidate number, surname and forename, together with the relevant unit code, so that the portfolio is clearly identified as the work of one candidate.

Each candidate produces an assignment for controlled assessment. The evidence should be contained within a separate folder within the portfolio. This folder may contain separate files.

Each candidate's controlled assessment portfolio should be stored in a secure area on the centre's network. Prior to submitting the controlled assessment portfolio to OCR, the centre should add a folder to the folder tree containing controlled assessment and summary forms.

Data formats for evidence

In order to minimise software and hardware compatibility issues it will be necessary to save candidates' work using an appropriate file format.

Candidates must use formats appropriate to the evidence that they are providing and appropriate to viewing for assessment and moderation. Open file formats or proprietary formats for which a downloadable reader or player is available are acceptable. Where this is not available, the file format is not acceptable.

Electronic controlled assessment is designed to give candidates an opportunity to demonstrate what they know, understand and can do using current technology. Candidates do not gain marks for using more sophisticated formats or for using a range of formats. A candidate who chooses to use only Word documents will not be disadvantaged by that choice.

Evidence submitted is likely to be in the form of word-processed documents, PowerPoint presentations, digital photos and digital video.

To ensure compatibility, all files submitted must be in the formats listed below. Where new formats become available that might be acceptable, OCR will provide further guidance. OCR advises against changing the file format in which the document was originally created. It is the centre's responsibility to ensure that the electronic portfolios submitted for moderation are accessible to the moderator and fully represent the evidence available for each candidate.

Accepted file formats

Movie formats for digital video evidence

MPEG (*.mpg)

QuickTime movie (*.mov)

Macromedia Shockwave (*.aam)

Macromedia Shockwave (*.dcr)

Flash (*.swf)

Windows Media File (*.wmf)

MPEG Video Layer 4 (*.mp4)

Audio or sound formats

MPEG Audio Layer 3 (*.mp3)

Graphics formats including photographic evidence

JPEG (*.jpg)

Graphics file (*.pcx)

MS bitmap (*.bmp)

GIF images (*.gif)

Animation formats

Macromedia Flash (*.fla)

Structured markup formats

XML (*xml)

Text formats

Comma Separated Values (.csv)

PDF (.pdf)

Rich text format (.rtf)

Text document (.txt)

Microsoft Office suite

PowerPoint (.ppt)

Word (.doc)

Excel (.xls)

Visio (.vsd)

Project (.mpp)

B Appendix B: Centre audit for running computer-based tests

Please use this information to ensure that the centre has the technical capability to administer the computer-based tests required for this specification. **Please note it is the responsibility of the Head of Centre to ensure that the centre is appropriately equipped to administer the tests in terms of system requirements and venue requirements.** The Exams Officer within the centre is responsible for the conduct of the computer-based tests within the bounds of the Instructions for the Conduct of Examinations issued by the Joint Council for Qualifications.

If there are any difficulties in completing the audit, please contact etest@ocr.org.uk

Appendix B1   Requirements for OCR computer-based tests

- Ensure that the Head of Centre, Exams Officer, Systems Manager/Technician, subject teacher and SENCo (if appropriate) are clear about what is involved.
- Check that the centre can meet the technical and venue requirements.

It is essential that all stakeholders within the Examination Centre plan the process for running computer-based tests carefully and methodically. The technical set-up of the hardware and software is likely to take a little time and application and so should be carried out well in advance to allow for any technical issues to be resolved in good time.

Before starting teaching the specification – planning and approval

1. Agree who is to be the Test Administrator, responsible for making sure that the tests are conducted properly. The Exams Officer may fulfil this role or may delegate it to a colleague.
2. Audit the centre against the Centre Checklist. This checks that the centre is able to meet the technical eligibility requirements. The school or college Systems Manager/Technician must be part of this process.
3. Ensure that the member of staff responsible for the Centre Network is aware of the plan to use computer-based testing. Consider carefully the implications of using computer-based testing.

Before entries are made for a computer-based test – setting up

1. The Technician must ensure that the necessary hardware and software has been set up before entries are made. The set-up must be done according to the instructions provided with the software.

2. The Technician installs the software according to instructions and runs all necessary diagnostic tests.

3. The Technician checks that the programs are running correctly and communicating properly with each other and the outside world.

4. The Technician checks that the software is running properly on the machines to be used for the live computer-based tests. It is important that an early decision is made on which room and equipment is to be used for the live tests.

5. Entries are made following the usual procedure, ahead of the entries deadline.

At least one month before the test date

The subject teacher and Test Administrator run a practice test for candidates so that they are familiar with the format and look of computer-based tests.

Prior to the live test

1. The Test Administrator and Technician ensure that all hardware and software is running appropriately in the room where the tests are to take place.

2. The Test Administrator and Technician ensure that they understand the process for downloading and accessing the live tests.

3. The Test Administrator checks the mouse, keyboard, screen and headphones (if required) on each candidate workstation.

On the day of the test

1. The Test Administrator runs the tests according to the instructions and within the bounds of the *Instructions on the Conduct of Examinations* document provided by Joint Council for Qualifications.

2. The Test Administrator uploads candidates' responses according to the instructions.

B

Appendix B2   Centre checklist for running computer-based tests

Technical requirements

Minimum requirements for each candidate workstation

Processor speed	1.0 GHz
Memory (RAM)	128 MB RAM (256 MB recommended)
Hard disk space	At least 250 MB of available hard disk space
Operating system	Windows XP/2000/2003
Browser	Internet Explorer 6 (or above)
Display	High colour 32-bit display or better Resolution 1024 x 768,
	Mouse
Admin rights	PC/Network administration rights for installation
Protocols supported	TCP/IP
Player	Flash Player version 8

Minimum server requirements for test administrator computer (as above plus)

Processor speed	1.0 GHz
Memory (RAM)	512 MB RAM
Hard disk space	At least 1.5 GB of available hard disk space
Adobe application	Adobe Acrobat reader installed
Printer	Connection to a printer

Minimum server requirements

Processor speed	1.7 GHz or above (single CPU server) 1.2 GHz or above (multiple CPU or dual core CPU server)
Memory (RAM)	512 MB RAM
Hard disk space	Minimum 2 GB free space
Operating system	Windows 2000 server (Service Pack 4 or later) Windows 2003 server Windows 2003 server Release 2

Network infrastructure guidelines

Network connection	1 GB LAN interface card
Cabling	Category 5/5e/6 UTP cabling
Server connection speed	1 GB server connection
Workstation connection	Switched 100 Mbps connection recommended
Connection sharing	Shared 100 Mbps connections if necessary but a maximum of 24 users per switch feed Hubs, where used, should not be cascaded

Administration requirements

Workstation requirements

Capacity for a minimum of seven candidates (8 PCs)

A spare capacity of one workstation for every seven

One workstation within the same room as the candidate workstations to run administrative functions

Test room requirements

A quiet room or rooms, free from distractions and interruptions

A room or rooms and equipment dedicated to the test during the session

Good lighting, without disruptive glare on screens

Proper ventilation and heating (where necessary)

Walls free from display material

Appropriate furnishing to give candidates maximum comfort

Adjustable chairs

Adequate space at each workstation to allow candidates to take notes

Secure workstations. Seating arrangements should prevent candidates from being able to see a fellow candidate's screen. The minimum distance between the outer edge of one screen and the next should be 1.25 m, unless the monitors are positioned back to back or separated by dividers high enough to prevent other candidates from overlooking the work of others. In this case, the minimum distance need not apply. However, if the screens are diagonally opposite and not separated by dividers, 1.25 m may not be sufficient. The principal objective is to ensure that no candidate's work can be overseen by others, and Exams Officers must take appropriate steps to ensure that this can be achieved.

A clock or clocks in the room visible to all candidates, or the provision of alternative arrangements

A means of summoning assistance (eg phone) and support contact details available in the test room for emergencies

Disabled access to the test room and to workstations or the provision of alternative arrangements, e.g. a ground-floor room.

Facilities for registration and ID checking

Requirements outside the test room

None

Administrative personnel

An Exams Officer who will be available during all OCR computer-based test live sessions

A minimum of one invigilator per room for each session. If there are more than 25 candidates in a room, there should be a further ratio of 1 invigilator to every 25 candidates.
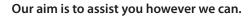
The Exams Officer and invigilator must be familiar with the emergency procedures for the test venue.

OCR computer-based tests will normally be administered at the centre, providing the centre has a venue that meets the above technical criteria, **or can be run at an external test venue** where authorisation has been given by OCR, for example where a candidate is in hospital on the day of the examination. An external test venue may be an appropriate multimedia room at a school or college or other venue suitable for computer-based testing but must meet the same technical criteria. The venue must have technical support personnel who will be available during all OCR computer-based test live sessions.

Need more help?

Our aim is to assist you however we can.

As well as giving you a toolkit of support services and resources to pick and choose from, we're also here to help you with specialist advice, guidance and support for those times when you simply need a more individual service.

Here's how to contact us for specialist advice:

By phone: 0300 500 4848

By email: ict@ocr.org.uk

By fax: 024 76 851633

By post: Customer Contact Centre, OCR, Progress House, Westwood Business Park, Coventry CV4 8JQ

www.ocr.org.uk

OCR customer contact centre

GCSE ICT
Dedicated ICT Support Line   0300 500 4848
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