



Revision Guide

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GCSE ICT Revision Guidance

Overview of GCSE ICT

Unit B061 ICT in today's world		
Written paper 1 hour – 60 marks	Written paper - Candidates answer all questions 1. ICT Systems 1.1 Systems 1.2 Hardware 1.3 Software 2. Exchanging Information 2.1 Communications 3. Presenting Information 4. Manipulating Data 4.1 Data Management 4.2 Data Handling Software 5. Keeping Data Safe and Secure 6. Legal, Social, Ethical and Environmental issues when using ICT 7. Using ICT Systems 7.1 How ICT systems are Used 7.2 Troubleshooting 8. Monitoring, Measurement and Control Technology 9 ICT and Modern Living	Worth 20% of total GCSE
Unit B062 Practical applications in ICT		
Controlled assessment 60 marks	Candidates create an ICT solution using ICT applications	30% of the GCSE
Unit B063 ICT in context		
Written paper 1 hour – 60 marks	Written paper - Candidates answer all questions 1. Networking Technologies 2. Data Management Techniques 3. Computer Security 4. Online Bookings and Research 5. Online Advertising and Web 2.0 Technology 6. Teleworking Techniques and Technology 7. Virtual Reality 8. Social Media 9. Customer Support	Worth 20% of total GCSE
Unit B064 Creative use of ICT		
Controlled assessment 60 marks	Candidates solve a problem by creating and developing a multimedia solution with appropriate creative elements	30% of the GCSE

Exam dates

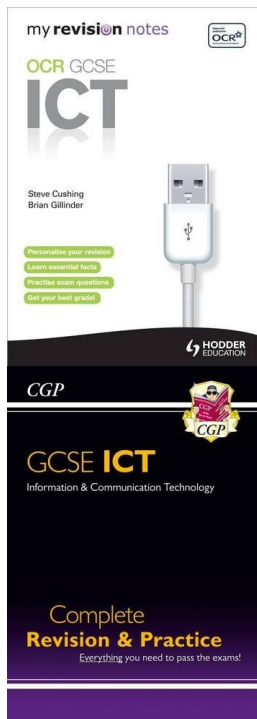
14/05/2018	B061/02	(ICT) ICT in today's world: Written Paper	AM	1h
00m				
17/05/2018	B063/02	(ICT) ICT in context: Written Paper	PM	1h
00m				

Useful Websites

<http://ocr.org.uk/qualifications/gcse-ict-j461-j061-from-2012/>

<https://www.bbc.co.uk/education/subjects/zqmtsbk>

Revision Guides



OCR Information & Communication Technology GCSE by Steve Cushing

GCSE ICT Complete Revision & Practice by CGP Books

GCSE ICT Timeline

Date	Lesson content	Homework Task	Homework Due Date
08/01/2018	Coursework for B062	Pre-release research	
15/01/2018	Coursework for B062	Pre-release research	
22/01/2018	Coursework for B062	B063 – Networking Technologies	26/1/2018
29/01/2018	Coursework for B062	B063 – Data Management Techniques	2/2/2018
05/02/2018	Coursework for B062	B063 – Computer Security	9/2/2018
12/02/2018	Coursework for B062	B063 – Online Bookings and Research	16/2/2018
19/02/2018	Half Term	B063 – Online Advertising and Web 2.0 Technology	23/2/2018
26/02/2018	B061- ICT systems	B063 – Teleworking Techniques and Technology	2/3/2018
05/03/2018	B061- Exchanging Information	B063 – Virtual Reality	09/03/2018
12/03/2018	B061- Presenting Information	B063 – Social Media	16/03/2018
19/03/2018	B061- Manipulating Data	B063 – Customer Support	23/03/2018
26/03/2018	B061- Keeping Data Safe and Secure	Revision + Past Paper Questions	
02/04/2018	Easter Holidays	Revision + Past Paper Questions	
09/04/2018	Easter Holidays	Revision + Past Paper Questions	
16/04/2018	B061- Legal, Social, Ethical and Environmental issues when using ICT	Revision + Past Paper Questions	
23/04/2018	B061- Using ICT Systems	Revision + Past Paper Questions	
30/04/2018	B061- Monitoring, Measurement and Control Technology	Revision + Past Paper Questions	
07/05/2018	B061- ICT and Modern Living	Revision + Past Paper Questions	
14/05/2018	B061/02 ICT in today's world: Written Paper	Revision	14/05/2018
17/05/2018	B063/02 ICT in context: Written Paper	Revision	17/05/2018

What do I need to revise for B061?

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, actuators
- 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

Software

Candidates should have knowledge and understanding of:

- systems software: operating systems, utility software, drivers
- user interfaces: human-machine interfaces – graphical, command line, direct neural interface.
- 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 (e.g. 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: monitoring or logging a workforce or member of the public, cookies, key logging, worker call monitoring/recording, electronic consumer surveillance, mobile phone triangulation, automatic number plate recognition, CCTV cameras
- applications software: word processors, desktop publishing, spreadsheets, database management, multimedia, slideshows, web authoring, photo-editing, video editing, graphics manipulation, communications (e.g. social networking, chat, instant messaging, web browsers, file transfer and email clients), presentation, gaming.

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 and 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, alpha numeric text, numeric (integer, real for example currency, percentage, fraction), date/time, limited choice (e.g. drop down lists, radio buttons, tick list) object, logical/Boolean (e.g. yes/no true/false) 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 (e.g. 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
- use of data modelling, formulae, functions, variables, different scenarios, verification (accuracy and plausibility), graphs and charts for predicting trends
- 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
- 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:

- secure and safe practices in the use of ICT: protecting data from accidental destruction, protecting data from deliberate damage; what is meant by data encryption and when and why is it used
- backups and archiving: taking backups of data/programs, keeping information/archives safe, use of backing storage media and protecting data from unauthorised access
- appropriate User Security methods and devices: user IDs, usernames, password, encryption, restricted physical access (e.g. biometric scans, electronic passes), restricted access to data (e.g. hierarchy of passwords, access rights, encryption), monitoring (e.g. transaction logs)
- malicious software (malware) and the damage it can cause: viruses, including key logging software
- 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.

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, Carpal tunnel syndrome
- 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/the 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.

What do I need to revise for B063?

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 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 (e.g. biometric scans, electronic passes), restricted access to data (e.g. hierarchy of passwords, access rights, encryption), monitoring (e.g. 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.