

GCSE Information Communication Technology Checklist

Unit 1 - Understanding ICT

(Written Exam: 1 hour 30 Minutes - 80 Marks - 20% of Qualification)



Topic	Sub-Topic	Explanation	I can statement	Studied	R	A	G
Data and Quality of data	Data and information	Evaluate data for fitness for purpose, accuracy and bias. Understand; ~That data consists of raw facts and figures e.g, readings from sensors, survey facts, etc. ~ that information is data which has been processed by the computer ~ that knowledge is derived from information by applying rules to it ~ the need for good quality data, G.I.G.O. (Garbage in, Garbage Out).	I can explain the difference between data, information and knowledge.				
			I can explain the need for good quality data.				
	Data Validation	Identify: ~ data validation techniques for single user and online systems such as range checks, lookup checks, format checks, presence checks and check digits. ~ potential types of errors and understand methods for minimising the risk of errors	I can list a range of different data validation techniques.				
			I can explain how a range of data validation techniques work.				
Home entertainment	TV Services	Understand the use, services, input and output devices used with: ~ Pay-to-view services, interactive services, e.g. shopping, betting, voting, dating	I can list different types of home entertainment systems.				
			I can explain how a range of home entertainment systems work.				
			I can give examples of interactive TV services.				

Home and Personal communication			I can outline the benefits and disadvantages of different interactive TV services.				
	Gaming	~ Gaming: online, PC gaming and games consoles. ~ Augmented reality systems and Virtual reality	I can list the typical input and output devices which are needed for computer gaming.				
			I can outline the benefits and disadvantages of computer gaming.				
	Photography	~ Basic digital photography: technology of capturing, storing and simple manipulation of images including cameras, megapixels, flash memory, display devices and photo editing software	I can give examples of techniques which can be used to manipulate images.				
			I can explain what is meant by the term megapixel.				
			I can outline how digital photography involves the use of input, storage and output devices.				
	Webcam	~ webcam services	I can explain what a webcam is.				
			I can outline the benefits and disadvantages of webcams.				
	Social Networking	~ Social networking: information needed to create accounts, services available	I can explain what a social networking site is.				
			I can outline the benefits and disadvantages of social networking sites.				
	Mobile Phones	~ Mobile phones	I can list the typical tasks which can be performed on a mobile phone.				
			I can outline the benefits and disadvantages of downloading files on a mobile phone.				
	Streaming	~ music and sound including downloading from the internet and related issues	I can explain how streaming works.				
			I can outline the benefits and disadvantages of streaming media.				
	Connections	Understand how computers can be connected to the internet:	I can explain what broadband is.				
I can outline the benefits and disadvantages of using broadband to connect to the Internet.							

	~ broadband	I can explain how satellites can be used to connect a computer to the Internet.				
	~satellite	I can outline the benefits and disadvantages of using satellites to connect to the Internet.				
	~ mobile communication	I can explain how mobile phones can be used to connect to the Internet.				
	~ cable	I can outline the benefits and disadvantages of using mobile phones to connect to the Internet.				
		I can explain how a dial-up modem works.				
	Understand:	I can outline the benefits and disadvantages of using a dial-up modem to connect to the Internet.				
	~ 802.11	I can explain how cable Internet works.				
	~ bluetooth	I can outline the benefits and disadvantages of cable Internet.				
	~ other emerging connection technologies	I can explain how to connect a device to the Internet wirelessly.				
	~ geographical information systems (GIS)	I can outline the benefits and disadvantages of connecting to the Internet wirelessly.				
		I can explain how bluetooth technology can be used to connect devices together.				
		I can outline the benefits and disadvantages of bluetooth technology.				
	Describe the benefits, advantages and disadvantages of these technologies	I can explain what a Graphical Information Systems (GIS) is.				
		I can outline the benefits and disadvantages of Graphical Information Systems.				
Home Business	shopping and booking services	Understand the use of computers when carrying out:				
		~ online shopping and searching for products on websites	I can explain how online shopping works.			
		~ booking online	I can outline the benefits and disadvantages of online shopping for customers and businesses.			
		~ verification (passwords and online data entry forms).	I can explain what the term verification means.			
			I can give examples of different types of verification methods.			
		I can explain what a booking site is.				

		Describe advantages and disadvantages of online booking and shopping services.	I can outline the benefits and disadvantages of using booking sites for both customers and businesses.				
Organisations: School, home and environment	School registration systems	Understand and describe the advantages and disadvantages of: ~ school registration systems	I can list the different methods which can be used to mark registers within a school registration system.				
			I can outline the benefits and disadvantages of each of the different methods which can be used to mark registers within a school registration system.				
			I can explain what a Management Information System (MIS) is.				
			I can outline the benefits and disadvantages of using a Management Information System (MIS).				
	Management information systems	~ management information systems in schools	I can explain how a Management Information System (MIS) can be used in a school environment.				
			I can explain how data logging can be used in school activities.				
	Data logging	~ data logging in school activities	I can outline the benefits and disadvantages of carrying out data logging activities.				
	Weather forecasting	~ weather forecasting systems.	I can explain how weather forecasting systems work.				
I can outline the benefits and disadvantages of using weather forecasting systems.							
Emerging Technologies	Be aware of current and emerging technologies and their impact on themselves and others in the home, school and environment Describe the advantages and disadvantages of emerging technologies at home, in school and the environment	I can give examples of emerging technologies which can be found in the home, school and the environment.					
		I can outline the benefits and disadvantages of emerging technologies.					
ICT and Lear		Understand how to manage the desktop environment including features such as;	I can explain what a Graphical User Interface (GUI) is.				

Applications Software	Understanding the desktop environment	~ adjust window size, mouse settings, icon size, screen resolution, desktop fonts, colour, position, graphics, contrast and volume to meet their own needs	I can outline the changes a user can make to their desktop environment.				
		~ move, copy, delete, rename, files and folders					
		~ on-screen help					
		~ features of a control panel					
		~ print settings					
		~ password protection					
		Understand the features of an the advantages and disadvantages of:					
		~ online tutorials					
		~ online assessments					
	~ virtual learning environments						
	~ massive open online courses	I can list different types of online learning tools.					
	Learning devices to support disabilities	Understand the uses of input devices such as:	I can outline the benefits and disadvantages of a range of online learning tools.				
		~ braille keyboards					
		~ concept keyboards					
~ specialist devices such as microphones							
	~ touch sensitive data entry devices						
Software to support disabilities Online and distance learning services	Understand the uses of:	I can list learning devices which can be used to support people with disabilities.					
	~ voice recognition software	I can explain a range of learning devices which can be used to support people with disabilities.					
	~ text to voice software	I can list different types of software which can be used to support learning disabilities online and distance learning services.					
	~ customised desktop environments						
Applications	Understand and identify suitable sources of information, including files on physical media (e.g. disks / optical media / SD	I can explain what application software is.					

		Cards), databases, cloud storage, the internet	I can give examples of application software.				
			I can explain what the term physical media means.				
		Understand the purpose and appropriate use of applications software	I can explain how cloud storage operates.				
			I can outline the benefits and disadvantages of a company using the Internet to gather information.				
Information Handling	Information Handling	Know when it is appropriate to:	I can explain what a database is.				
		~ update, append or delete records	I can give reasons why databases are used to store and organise data.				
		~ sort information into Descending and Ascending order on one or more fields	I can explain the difference between a file, record and field.				
		~ interrogate databases using single and multiple criteria.	I can explain why data might need to be deleted / removed from a database.				
			I can explain why data might need to be amended in a database.				
		Understand and appropriately use operators including = , < > , < , > , 'AND' , 'OR' , 'LIKE' .	I can outline different methods of sorting data in a database.				
		Understand and appropriately use wildcards (e.g. *).	I can outline different methods which can be used to integrate a database.				
		Understand and appropriately use parameters.	I can list operators which can be used to search a database.				
			I can list and give examples of different data types.				
		Have a basic understanding of data types including number, text, date, time, currency, Boolean, lists, picture, sound, video.	I can explain what a primary key is.				
		Identify fields and records in a file	I can explain what a search engine is.				
		Recognise and understand the purpose of the 'key field'.	I can outline how reports can be used to output data from a database.				
		Search for information using tools such as search engines, keyword searches, etc.	I can explain how a report from a database can contain a calculated field.				

		Understand:	I can outline the typical features found in a database report.				
		~ the outputting of data in report formats	I can explain what validation is.				
		~ how simple calculated fields are produced	I can give examples of how data validation can be used in a database.				
		~ the purpose and suitable application of validation techniques such as 'lists', 'range checks', 'format checks' and 'input masks' for common fields					
		Understand the benefits of using information handling for:					
		~ faster access to data	I can outline the benefits and disadvantages of using a computer to handle information.				
		~ variety of output formats					
		~ data integrity	I can outline with an example what password protection is.				
Security Issues	Understand:						
	~ password protection and password protocols	I can list typical password protocols.					
	~ access rights to data	I can explain with an example how access rights work.					
	~ backup and recovery procedures	I can describe the typical features that can be found in an organisation's recovery and backup policy.					
Email	Email	Understand how to create:	I can explain what email is.				
		~ an email	I can explain the what the terms CC and BCC mean.				
		~ a standard outgoing signature and message	I can explain what an attachment is.				
		~ send the email to one other email address	I can explain what a distribution list is.				
		~ send a group email	I can explain what an email signature is.				
		~ use cc and bcc, file attachments, forward emails to another email address	I can explain why folders might be used to group certain emails together.				
		~ create and manage an address book, create and save contacts	I can give an example of why an email might be forwarded to another email address.				

		~ organise and name email groups and folders	I can explain the importance of creating and maintaining an address book.				
Instant Messaging	Messaging	Understand the use of messaging systems to share media and text (e.g. SMS)	I can explain how messaging systems can be used to share media and text.				
			I can outline the benefits and disadvantages of email.				
	Security	Discuss the advantages and disadvantages of using email	I can describe appropriate measures which can be used to prevent misuse within messaging services.				
		Understand appropriate measures to prevent misuse e.g. viruses, abusive language.	I can explain what encryption is.				
		~ understand that emails and messages can be encrypted	I can explain why emails might be encrypted.				
		~ understand the use of email as a DDoS attack mechanism	I can explain how email can be used as a DDoS attack mechanism.				
		~ understand the concept of email address spoofing	I can explain how email address spoofing works.				
Spreadsheet software	Spreadsheet software	Understand:	I can explain what a spreadsheet is.				
		~ the difference between labels, data and formula	I can explain the difference between a label, data and formulas.				
		~ formulas and functions to calculate information such as SUM, MIN, MAX, AVERAGE, COUNT variants or IF	I can explain the difference between a formula and a function.				
		~ absolute and relative cell referencing	I can outline typical formulas which can be used in a spreadsheet.				
		~ appropriate formatting techniques e.g. borders, currency	I can explain how the SUM, MIN, MAX, AVERAGE, COUNT and IF functions can be used to calculate information.				
		~ cell merging and splitting	I can outline the different formatting techniques which can be used in a spreadsheet model.				
		Understand the benefits of using spreadsheets for:					
		~ changing information in a spreadsheet model to make and test predications (What if investigations)	I can explain the difference between relative and absolute cell referencing.				

		~ generating different charts and graphs from suitable data	I can explain the difference between cell splitting and merging.				
		~ accurate calculations	I can outline with examples the benefits of using spreadsheets to calculate data.				
		~ auto recalculation					
Data Logging and control	Data logging	Understand:	I can explain the process of data logging.				
		~ the process of data logging	I can outline different types of sensors and suggest suitable uses for them.				
		~ different types of sensor and suitable uses for them	I can write a series of instructions to control a screen image or external device appropriately.				
		~ how to write a sequence of instructions to control a screen image or external device appropriately.					
		~ the use of ICT to control and monitor areas fo everyday living such as electronic toys, games, central heating systems, burglar alarms, learning thermostats, smart meters, computer control (non-feedback)	I can outline examples of how IT is used to control and monitor areas of everyday living both in and outside of the home.				
DTP Software	Desktop publishing software	Understand the purpose and use of the following:	I can explain what Desktop Publishing Software (DTP) is.				
		~ spell checker, online thesaurus, online translators					
		~ mail merge	I can explain the difference between a spellchecker, thesaurus and online translator.				
		~ automatic routines such as: headers and footers and pagination					
		Recognise, use and where appropriate evaluate techniques such as:	I can outline a range of features which are commonly found in Desktop Publishing (DTP) software.				
		~ changes in font type, style and size					
		~ justification (left, centre, fully justify)					
		~ importing different file formats e.g. clipart, csv, txt, rtf, etc.	I can explain how mail merge works.				
		~ tabulation, tables, borders, single and double line spacing					
		~ tracking and kerning, autoshapes, watermarks					

		~ manipulation of graphics such as resizing, cropping, rotating and mirror imaging					
Web and Presentation Software	Web and presentation software	Understand the appropriate use of good practice in designing web and slide presentations including:	I can explain what sequencing instructions are.				
		~ sequencing instructions	I can explain what is considered good practice when using animations in a presentation.				
		~ animations	I can explain in terms of presentation software what a transition is.				
		~ transitions	I can explain what a hyperlink is.				
		~ links	I can explain why consideration of target audience is important when using web and presentation software.				
		~ consideration of target audience	I can outline standard navigation techniques.				
		~ appropriate use of standard navigation techniques	I can explain how websites and presentations can be made accessible to people with disabilities.				
		~ disability considerations e.g. sound, font style and sizes, pop up comments on images					
Legal and Ethical Issues	Legal and Ethical issues	Understands issues concerning copyright misuse.	I can explain what the Copyright Designs and Patents Act 1988 is.				
		~ file-sharing					
		~ ripping and burning of optical media	I can outline examples of practices which are illegal under the Copyright Designs and Patents Act 1988.				
		~ copying of streams					
		~ infringement of copyright owner's rights					
Staying Safe Online	Dangers online	Understand the dangers associated with:	I can explain the dangers of disclosing personal data online.				
		~ the disclosure of personal data	I can explain how images may be misused on the Internet.				
		~ misuse of images	I can explain the dangers of using inappropriate language online.				
		~ using inappropriate language	I can explain what a code of conduct is.				

		~ webcams	I can outline methods of how to prevent unauthorised access to software and hardware online.				
		Understand codes of conduct for personal protection. Prevent unauthorised access to hardware and software (e.g. firewalls). Discuss appropriate steps to avoid inappropriate disclosure of personal information	I can explain how to stay safe online.				
Data Protection Issues	Data protection	Know:	I can explain how to protect data from accidental destruction.				
		~ how to protect data from accidental destruction	I can explain how to protect data from deliberate damage caused by viruses and other types of malicious damage.				
		~ how to protect stored or transmitted data from unauthorised access					
		~ how to protect data from deliberate damage cause by viruses and other types of malicious damage	I can explain how to protect stored / transmitted data from unauthorised access.				
Health Issues	Health issues associated with use of computers	~ State potential health hazards when using computers	I can list health hazards which can occur through the use of computer systems.				
		~ suggest methods for prevention or reducing the risk of potential health hazards	I can explain different health hazards which can occur through the use of computer systems.				
			I can outline ways in which health hazards can be prevented / limited when using computer systems.				