

Topic	Confidence Level		
	Red	Amber	Green
<p><b><u>ICT</u></b></p> <p><b><u>Understanding Computer Systems</u></b></p> <p><b>1. Understand how ICT can be used to meet business needs</b></p>			
<p>Features and purposes of computing devices, i.e.:</p> <ul style="list-style-type: none"> <li>• desktop and portable devices, i.e. laptops, netbooks, tablets, smartphones</li> <li>• input devices, i.e. mice, keyboard, microphone, sensors, pads, specialist keyboards, touch pad, microphones, remote controls, scanners, digital cameras, webcams, touch screens, readers for bar codes, magnetic stripes and chip and pin, MIDI instruments</li> <li>• output devices, i.e. monitor/screens, printers, speakers, head/earphones, digital projectors, data projectors, plotters, activators</li> <li>• software, i.e.: <ul style="list-style-type: none"> <li>○ operating systems (e.g. Windows, OS X, Android, iOS)</li> <li>○ utility software (e.g. computer security)</li> <li>○ applications software, i.e. word processors, desktop publishing software, spreadsheets, database management software, multimedia software, slideshow software, photo editing software, video-editing software, graphics manipulation software, communications software (e.g. social networking software, chat, instant messaging, file transfer and email clients), presentation software, gaming software, web-browsers, apps for portable devices</li> </ul> </li> <li>• storage and connectivity devices, i.e.: <ul style="list-style-type: none"> <li>○ optical disks (e.g. CD and DVD for data storage)</li> <li>○ magnetic media (e.g. internal and external hard disk drives (HDD), tape)</li> <li>○ Solid State Drives (SSD)</li> <li>○ Memory cards, i.e. flash memory devices</li> <li>○ network devices (e.g. routers, modems)</li> <li>○ cloud storage</li> </ul> </li> <li>• configurations, i.e.: <ul style="list-style-type: none"> <li>○ typical office configurations</li> <li>○ customised systems for specified needs, i.e.: <ul style="list-style-type: none"> <li>▪ physical impairment, i.e. sight, hearing, movement</li> <li>▪ remote working (e.g. travelling, hotel or home)</li> </ul> </li> </ul> </li> </ul>			
<p>How the following factors can affect the choice of system: cost, availability, user needs, data security</p>			

How peripherals can be connected to a computer device, i.e.: <ul style="list-style-type: none"> <li>wired methods (e.g. USB, firewire)</li> <li>wireless methods (e.g. wifi, Bluetooth, infrared)</li> </ul>			
How to connect a computing device to an existing wireless network, i.e.: <ul style="list-style-type: none"> <li>network name, i.e. Service Set Identifier (SSID)</li> <li>the use of security keys</li> <li>appropriate firewall settings for public and private networks</li> </ul>			
How organisations can monitor employees i.e. GPS location tracking, monitoring internet use, monitoring communications			
<b>2. Know how to work with information and data to meet specified business needs</b>			
Data capture methods, i.e.: <ul style="list-style-type: none"> <li>on-line and paper-based forms</li> <li>automated data capture systems i.e. control system sensors, barcode readers, Radio Frequency Identification Device (RFID), Near Field Communication (NFC)</li> </ul>			
How the following factors can affect the choice of method: <ul style="list-style-type: none"> <li>nature of information to be collected (e.g. environmental conditions, location of information)</li> <li>cost</li> <li>availability</li> <li>ease of use</li> <li>data security</li> </ul>			
How to design data capture forms to obtain specified information			
How to code information for use in a spreadsheet or database			
Data validation methods			
File formats for storing data, i.e.: <ul style="list-style-type: none"> <li>proprietary formats, i.e. .doc, .xls, .ppt, .fla, .wma, .aac</li> <li>open formats, i.e. .rtf, .pdf, .csv, .exe, .txt, .mp3, .wav</li> </ul>			
Data storage technologies, i.e.: <ul style="list-style-type: none"> <li>local and removable media</li> <li>remote storage (e.g. offsite location, cloud storage)</li> </ul>			
Security measures to be used when storing data, i.e. <ul style="list-style-type: none"> <li>network/computer security, i.e.: <ul style="list-style-type: none"> <li>usernames/passwords</li> <li>access rights/permissions</li> </ul> </li> <li>document security, i.e.: <ul style="list-style-type: none"> <li>passwords</li> <li>other ways to restrict access to or editing of content</li> <li>how and why data is encrypted</li> </ul> </li> <li>physical security to prevent loss of data/devices (e.g. locked doors)</li> </ul>			
Data transferring technologies, i.e.: <ul style="list-style-type: none"> <li>wired and wireless methods</li> <li>mobile data transmission (e.g. 3g, 4g)</li> <li>remote methods (e.g. email, internet/cloud, peer to peer file sharing)</li> </ul>			

<ul style="list-style-type: none"> <li>• security methods, i.e. data encryption</li> <li>• how the following factors can affect the choice of method: file size, transfer speed, future-proofing, data security, user needs</li> </ul>			
Factors affecting data transfer speed (e.g. bandwidth, router technology)			
The factors affecting the appropriate optimisation of electronic files (e.g. download speeds, quality of product)			
How to use back-up and recovery systems, i.e.: <ul style="list-style-type: none"> <li>• data storage media (e.g. removable devices, remote storage)</li> <li>• back-up frequency</li> <li>• archiving</li> <li>• automated versus manual systems</li> </ul>			
How the following factors can affect the choice of method: cost, availability, ease of use, data security.			
<b>3. Know how ICT can be used to support business working practices</b>			
How businesses can communicate with employees and others working remotely, i.e. voice telephones, SMS, instant messaging, email, chat rooms, forums, bulletin boards, Voice-over-IP (VoIP), video conferencing, webcams, blogs, social networking <ul style="list-style-type: none"> <li>• appropriate use of remote communication tools, i.e. for email appropriate use of subject, cc/bcc, attachments and email etiquette</li> <li>• the benefits and drawbacks of these methods</li> </ul>			
How diary management software can be used to organise work schedules, i.e.: <ul style="list-style-type: none"> <li>• creating appointments/meetings</li> <li>• inviting participants</li> <li>• creating tasks</li> <li>• creating to-do lists</li> <li>• setting reminders</li> </ul>			
How documents can be created and edited collaboratively, i.e.: <ul style="list-style-type: none"> <li>• documents in shared access locations, i.e.: <ul style="list-style-type: none"> <li>○ network shared areas (e.g. read/write access)</li> <li>○ cloud-based services (e.g. providing open – or restricted – access to services enabling the creating/editing of documents on-line)</li> </ul> </li> <li>• inserting comments into an existing draft</li> <li>• editing drafts, tracking changes made</li> <li>• Reviewing facilities: accepting or rejecting changes made.</li> </ul>			
<b>4. Understand how legal, ethical, safety and security issues affect how computers should be used</b>			
How legislation affects business computer users, i.e.: <ul style="list-style-type: none"> <li>• health and safety</li> <li>• data protection</li> <li>• copyright</li> <li>• computer misuse</li> </ul>			

<p>How moral and ethical issues affect business computer users, i.e.:</p> <ul style="list-style-type: none"> <li>• the use and abuse of personal and private data</li> <li>• cyberbullying</li> <li>• monitoring of individuals by organisations through the use of: <ul style="list-style-type: none"> <li>○ worker monitoring/logging,</li> <li>○ cookies,</li> <li>○ key logging,</li> <li>○ worker call monitoring/recording,</li> <li>○ electronic consumer surveillance,</li> <li>○ mobile phone triangulation</li> </ul> </li> </ul>			
<p>The implications and consequences for organisations of data loss, corruption and theft, i.e.:</p> <ul style="list-style-type: none"> <li>• legal implications (e.g. action from the Information Commissioner)</li> <li>• impact on customers (e.g. reduced confidence in business, increased risk of personal identity theft)</li> <li>• impact on employees (e.g. disciplinary action for not following company procedures)</li> <li>• impact on organisation (e.g. increased costs in resolving problems caused, loss of income if customers lose confidence)</li> </ul>			
<p>The main threats to data security and how to deal with them, i.e.:</p> <ul style="list-style-type: none"> <li>• threats to data security, i.e.: <ul style="list-style-type: none"> <li>○ computer viruses</li> <li>○ Trojans</li> <li>○ Worms</li> <li>○ Phishing</li> <li>○ Spyware</li> <li>○ Adware</li> <li>○ Hacking</li> <li>○ Denial of Service (DoS) attacks</li> <li>○ physical threats (e.g. loss/theft of devices)</li> </ul> </li> <li>• actions to minimise risks, i.e.: <ul style="list-style-type: none"> <li>○ act online in ways which reduce the risk of identity theft and protect personal security</li> <li>○ use of protection software, i.e. firewall, anti-virus, anti-spam, data encryption to store and transfer data</li> </ul> </li> </ul>			
<p>Using automatic and manual updating facilities for operating systems and security software.</p>			