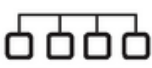
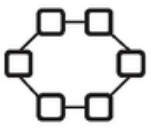
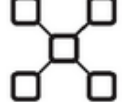


*This represents a bite-sized selection of key theory for your forthcoming GCSE ICT – **Unit 3** exam. It is the bare-minimum you **MUST** be able to remember before the exam. Ideally read over all powerpoints on Resources drive.*

<p>Animation</p>	<p>Persistence of vision: tricking the eye into thinking images move. The eye fills in the gaps in an image sequence creating the <i>illusion</i> of movement. Stop Motion / Claymation: Animating 'frame by frame' – with small movements each time. Hand-drawing or models / plasticine. Tweening: Start and end points are set and software fills the 'in-between' parts in – Saves time drawing each frame. Rotoscoping: Filming in live action and then tracing over with drawing. Creates a very life-like movement.</p>	
<p>Networks</p>	<p>LAN: Local Area Network (PC's and peripherals connected in a single room or building). WAN: Wide Area Network (Network covers whole county or world) Pros of networked computers: share files / share printers / control access to files / monitor internet traffic / allow staff to access remotely. Cons of networked computers: Reliant on central server working / virus on one pc spreads to all / cost of set-up and maintenance / restricts staff PoS systems: (Point of Sale System:) When a shop connects to a bank network to verify card details and allow for payment. Automatic stock control systems: Supermarket tills are connected to warehouse ordering systems. As an item is bought it is automatically re-ordered to ensure that stock levels are maintained.</p>	
<p>Internet, Intranet & Extranet</p>	<p>Internet: A global network of computers and servers. (websites are stored on servers) Intranet: An internal only system (imagine webpages on an internal network drive) Can only be viewed inside company. Faster to access / download and more secure. Extranet: An Intranet that allows certain people to log-into from outside. A secure website like Moodle VLE.</p>	
<p>Network Hardware</p>	<p>Router / Modem: Connects LAN to WAN / Converts analogue to digital Hub: Shares one signal with many devices Switch: Sends specific data from one item to another specific item (used to connect many users to a single server) Server: Controls network – allows log-on – stores files centrally Repeater: Allows network to span large distances – repeats signal down cable. Gateway: Where one network meets another (Shop connects to bank for example – Similar to Firewall)</p>	
<p>Network Topologies</p> <p><i>Different Ways To Set-Up A Network – Speed, Adaptability, Security and Cost are all considerations in deciding which to use.</i></p>		<p>BUS: <i>Data flows along main backbone cable</i> Easy to add new workstations / Cheaper - Less Cable If problem with main backbone – Network Stops More workstations = slower speeds. Only one PC at a time can transmit data down it.</p>
		<p>RING: <i>Data 'token' passes from one PC to the next</i> No reliance on central PC. No Data collisions as data travels in one direction only. Network needs to be shut-down to add more devices. If one cable breaks – whole network fails.</p>
		<p>STAR: <i>Each device has a cable direct to the main server.</i> Reliable – If one cable fails, other users not effected. Expensive as uses most cable. Needs server to work.</p>

<p>Social and environmental impact of Networks</p> <p>Social and environmental impact of Networks (Continued)</p>	<p>Homeworking / Teleworking: Allows people to work from home – connect to office network remotely. Advantages: Saves them time travelling and costs of petrol. Fit around family commitments (picking up kids from school) Saves business needed more office space and equipment. Disadvantages: Hard to keep track of exactly what staff are doing. Leads to poor work – life balance.</p> <p>Videoconferencing: Meeting between people / businesses remotely using webcams / microphones. Saves time & money in travelling. Equipment costly to set up – lots of bandwidth – can 'lag' signal breaks up.</p> <p>Environmental impact: Computers can save paper by sending data electronically – save travel and petrol use through videoconferences. Satellites can monitor globe and we can <u>learn</u> from it (temperature and de-forestation changes) – make into graphs etc...</p> <p>Impact upon rich and poor communities: Allows big business to sell to global customer base / allows poor people to buy items cheaper / less jobs due to introduction of computers / jobs can be done in poorer countries across net.</p>
<p>HCI's (Human Computer Interface – The ways we interact with a computer)</p>	<p>Operating systems: Allows the computer to be used. Allows for file storage and connection to peripheral devices.</p> <p>GUI: A Graphical User Interface. (Windows, Icons, Mouse, Pointers) Allows people to use computer easily – but uses a lot of memory.</p> <p>Command line: Text only interface – quicker access to files and settings – advanced technical users only – prompts (instructions) are typed in.</p> <p>Voice: Allows physically disabled to access pc.</p> <p>Biometrics : Good method of security (fingerprint – iris scan etc...)</p>
<p>Organisations</p>	<p>Banking – 24hour access to services. Banks can invest money on foreign markets easier. Payments automated means less high street banks needed – less expenses for banks.</p> <p>Payroll (wages paid direct into bank – more secure for business – less cash on premises – more exact calculation of wages and tax deductions.</p> <p>Postal System – Handwriting recognition on addresses sorts letters automatically – System can weight items and scan for correct payment stamps.</p>
<p>Laws (Legal Acts)</p>	<p>Data Protection Act: States what companies can and cannot do with people's personal data. Person is known as 'Data Subject' – has the right to see what data company holds about them. (Police and Military may be except from showing)</p> <p>Law states Company must keep data secure / up-to-date / accurate and obtain information fairly / Prevents selling data onto other companies (junk-mail)</p> <p>Computer Misuse Act: Making accessing (hacking) another computer without permission an offence. Fines / Prison go up for (1) Attempted Access (2) Access (3) Modifying files (4) Deleting Files.</p> <p>Electronic Communications Act: Allows documents & contracts to be 'signed' electronically. Means business can exist more without paper: e-commerce Note, the 'signatures' are more like <i>passwords</i> and encrypted codes that can verify the person who created.</p> <p>Regulation of Investigatory Powers Act: Allows Government to legally intercept emails and phone calls on grounds of 'national security'. Regulates surveillance.</p> <p>Copyright & Patents Act: Protects 'artistic works' (movies, music, writing etc) from being copied and distributed without permission. Helps artists get royalties from their creations. Patents refers more to 'inventions' and how things <i>physically</i> work.</p>
<p>Safety in organisations</p>	<p>Health Hazards associated with computer use and preventions</p> <p>Eye Strain: User should alter contrast / take regular breaks</p> <p>Back Ache: Sit on adjustable chair / take regular breaks</p> <p>Repetitive Strain Injury: Wrist pain – too much typing / Take regular breaks</p> <p>Stress: Overwork load – being constantly surrounded by technology – monitoring in workplace – fear of keeping up with technological change. – Make regular (milk) shakes.</p> <p>Ergonomics – Designing chairs, desks, computer mouse & keyboard to be comfortable to use.</p> <p>Safety issues include – trailing electrical cables / Overloaded electric plug sockets / Liquid (especially - milk shakes) near electrical equipment.</p>

