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**The Bourne Academy**

**Knowledge Organiser: Year 10 Spring Term - ICT**

**6. Malware**

**a) Virus** is a harmful program that spreads by attaching itself to files and damages or steals data.

**b) Trojan** is a program that pretends to be useful but secretly performs harmful actions like stealing information.

**c) Adware** is software that shows unwanted ads on your device, usually to make money for the creator.

**d) Worm** is a self-replicating program that spreads across networks, often slowing down or damaging systems.

**e) Rootkit** is a program that hides harmful software on your device, allowing hackers to control it without detection.

**f) Ransomware** is software that locks your files or device and demands money to unlock them.

**g) Spyware** is software that secretly collects and shares your personal information without your permission.

**h) Bot** is a program that performs tasks automatically by hackers to do harmful things.

**i) Network interface controller** is a chip that allows the computer to connect to a network. Each NIC contains a MAC address.

**j) MAC address** uniquely identifies a device on a network. It is fixed to a device and used within the LAN.

**k) IP address** can be changed as needed. It is used for routing data across larger networks like the internet.

**5. Emerging network technology**

**d) Virtual network** is a software-based network that lets virtual machines communicate like they're on the same physical network.

**e) 5G networks** are the latest mobile internet technology, much faster and with lower delay than 4G, supporting more devices.

**f) Internet of Things (IoT)** is a network of devices connected to the internet that can share and collect data automatically.

**g) Edge computing** is processing data closer to where it's created, reducing delays and improving performance, especially for real-time data from IoT devices.

**4. Network hardware**

**a) Hub** is a device that connects multiple computers and broadcasts data to all devices.

**b) Switch** is a device that connects computers and directs data to devices using MAC addresses.

**c) Router** is a device used to connect different networks, such as linking a LAN to the internet.

**d) Bridge** is a device that links two networks with the same base protocol, like connecting two LANs.

**e) Gateway** is a device that links networks with different protocols, such as connecting a LAN to a WAN.

**f) Modem** is a device that converts digital signals into analogue signals for transmission over phone lines.

**g) Repeater** is a device that amplifies a signal so it can travel longer distances.

**h) Wireless access point** is hardware that relays data from a wired network to a wireless device, extending the network's coverage.