



# Year 9 Computer Science - Computer Networks

## Network Security

Security Type	Meaning
Firewall	Controls which programs on your computer can send and receive data packets.
Antimalware	Scans your computer system and files for malicious software.
Encryption	Scrambles data to make it unreadable.
Decryption	Unscrambles it so that it is readable.

## Viruses

Malware combines the words 'malicious' (meaning 'harmful') and 'software'. It is a program designed to cause damage to a computer or a computer network.



### Virus

A virus embeds itself within computer software. When the software is run it creates copies of itself using software as a host. A virus is capable of slowing down your digital device, can stop it running or even steal your data.



### Worms

Worms attack systems connected to the internet. Like a virus, a worm is capable of copying itself, causing similar damage to a virus. However, worms are standalone software and don't require existing software to host them.

### Spyware

Spyware is a type of program that secretly records what you do on a computer. Spyware can be used to steal personal information such as capture passwords, email addresses or banking information. They can even control your webcam.



### Trojan

A Trojan is a harmful piece of software, pretending to be useful. Commonly spread through email attachments, a user is typically tricked into loading it onto their computer. Attacks can vary from deleting files and stealing data to creating access points for hackers



## Passwords

A strong password contains a mixture of numbers, letters, symbols and is at least 8 characters in length, for example: **Ce91!\*8dj**





## Networks

**LAN- Local Area Network** - connects devices together over a small geographical location e.g. a building. They connect computers using a combination of Ethernet cables and switches and require a Network Interface Card.

**WAN-Wide Area Network** - A computer network where devices are connected over a large geographical area (e.g. the internet). They require access to the internet via a router/modem.

**WPAN** - Wireless Personal Area Network used to connect devices to your personal computer system without the use of wires. Most commonly uses Bluetooth. E.g. connecting a peripheral device to your laptop, connecting a mobile phone to a car, wireless headphones to your phone etc.

## LAN Hardware

Hardware	Meaning
 Server	Stores all user data and information within a network in a central location. This allows users to log into any workstation.
 Switch	Using Ethernet cables to connect to both the server and individual workstations. A switch directs information between the server and individual workstations.
 Router	Allows wireless connection of mobile devices to a network if within suitable range. Allows sever devices to be connected at the same time.
 Ethernet Cable	Networking hardware used to connect one network device to another. They can be used to share devices such as printers and scanners among many users