



4. Networks and the Internet

Computer network	A computer network is a group of two or more computers or electronic devices that are connected to one another in order to exchange data and share resources .
Username and password	These are usually required to log in to the network or server (authentication). They ensure that only authorised persons have access to sensitive data and network resources.
Internet	The Internet is a global network of interconnected computer networks.
Intranet	An intranet is a private network that uses the same basic technologies as the internet , but is accessible only to authorised users, e.g. within a company.
HTTPS	HTTPS – An encrypted and therefore more secure connection between a web browser and a web server. The 'S' stands for ' Secure '.
LAN	LAN (Local Area Network) is a local network, for example in a school or a company.
WAN	WAN (Wide Area Network) is a network that spans large geographical distances, for example across countries or continents.
Wi-Fi (wireless network)	A wireless, local radio network for connecting devices wirelessly via radio waves. • Secure Wi-Fi: Requires a password (network key), usually with WPA2 or WPA3 encryption. This protects the wireless connection against unauthorised access. • Open Wi-Fi: The Wi-Fi connection is not protected by a Wi-Fi password. However, for HTTPS connections, data is still transmitted in encrypted form between the browser and the web server.
ISP	An ISP (Internet Service Provider) is a provider that offers customers access to the internet. Criteria for choosing an ISP: • Connection speed: How quickly data is downloaded or uploaded (in Mbit/s). • Monthly costs: The ongoing charges for the contract. • Availability at your home address: Which connections (e.g. fibre-optic, DSL, cable) are technically possible at your address.
Upload	Data is uploaded from your own device to the internet or to a server, e.g. a photo to an online service.
Download vs. Upload	Download means receiving data onto your own device. Upload means sending data from your device to the internet or a server.



Data transfer rate	The data transfer rate is measured in bits per second (bit/s). Typical units are Kbit/s, Mbit/s and Gbit/s.
Mobile network technology	Mobile network technology allows you to access the internet on the go using a laptop, tablet or mobile phone – without needing Wi-Fi. This works via the mobile network, e.g. LTE (4G) or 5G. A SIM card is required. This means you can browse websites, stream videos or send messages from anywhere.
LTE (4G)	LTE is a fourth-generation (4G) mobile network technology.
VPN	A VPN (Virtual Private Network) establishes a secure, encrypted connection over a public network such as the internet. In the workplace, it is often used to provide secure access to company resources whilst working from home or on the move.
VoIP	VoIP (Voice over Internet Protocol) refers to internet telephony. Calls are transmitted via the internet.
IM	IM (Instant Messaging) refers to the immediate sending of messages via the internet, e.g. using WhatsApp.