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Tomorrow's World

Electronic communication

The past

People have always wanted to communicate. In the past, smoke signals, drums, carrier pigeons and messengers were used to pass short messages over long distances, but these methods could be slow and inefficient. During the 1800s, inventors found ways to communicate electronically. Morse code, telegraphy, television, radio and the internet are just some examples of electronic communication invented over the last 200 years.

The present

Today, communication is global, instant and continually changing due to the development of the internet and technology. People can use electronic devices such as tablets, smartphones and watches to send private messages via email, text message or webcam. Many people also use public communication platforms, such as blogs, podcasts and social media sites including Facebook, Instagram or Twitter. The internet has made communication easy and efficient but it has also opened people up to e-safety issues, such as trolling and identity theft.

The future

Scientists and engineers are already developing ideas for technology that will make current technology seem old-fashioned and out-of-date. Some homes are already connected with smart technology and virtual assistants. Luminous flooring has been developed by Philips that connects to a network or mobile device and greets and informs people using special lighting. Technology is advancing so quickly that there may be ways of communicating that have not yet been imagined.

Websites

A website is a way of connecting a collection of web pages in one location. The creator of a website will use an address called a uniform resource locator (URL). This needs to be typed into a browser or searched for using a search engine. When the address is opened, it accesses the website's home page. Different links can then be clicked on to access the different web pages, other websites, definitions or multimedia resources. These links are called hyperlinks, and may be in the form of icons, images or videos.

Web pages

A web page is a document containing information that can be accessed through the internet. It may also contain hyperlinks that can be followed to find out more information.

Features of a good web page



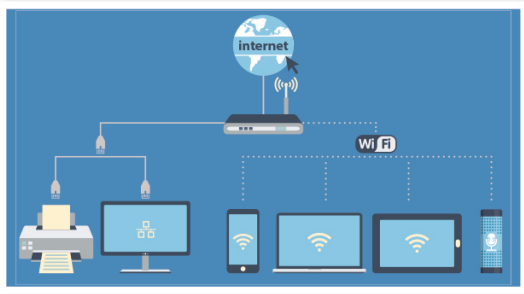
1 memorable URL
2 colourful banner
3 sharp images
4 page title
5 simple navigation
6 interesting content

Networks

A network connects different computers and devices so they can share data and access the internet.

LAN

A local area network (LAN) is used in a specific area, such as in the home, school or office. A router connects the computers and devices either through wires or using Wi-Fi.



WAN

A wide area network (WAN) connects many locations via the internet. Large organisations, such as businesses, use WANs to share information with customers, staff and suppliers who are in different locations. The largest WAN is the internet itself, as it connects all locations.

Programmable technologies

Programmable technologies are used in electrical devices to give them instructions. Washing machines can be programmed to run for a certain amount of time or temperature, or a robotic arm can be programmed to carry out a specific job in a factory. A coded sequence of rules or instructions called an algorithm is used to tell the mini computer, called a microprocessor, inside an electrical device how to complete a task. It is important that the algorithm is checked and debugged so that the device performs the task correctly.

Tip: Print in A3.

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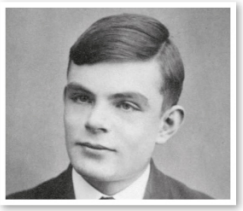
Technology timeline

2700–500 BC	Early civilisations use a counting device called an abacus.
1642–44	A mechanical calculator called Pascaline is invented.
1804–5	The first programmable machine called the Jacquard loom is developed.
1822	The Difference Engine, a mechanical calculator that uses a gear system, is invented.
1941	The world's first automatic, programmable computer, Z3, is created.
1943–45	The Colossus computer is developed.
1969	A network system called ARPANET is used for the first time.
1971	The first email is sent electronically.
1976	Mike Wozniak and Steve Jobs launch Apple Inc and their first home computer, Apple I.
1990	The World Wide Web (WWW) is launched.
1995	Microsoft launch the first operating system called Windows 95.
1998	The search engine Google is launched.
2004	The social networking site Facebook is launched.
2006	A games console that detects a player's real-life actions is launched called Nintendo Wii.
2015	Apple launch their smartwatch.

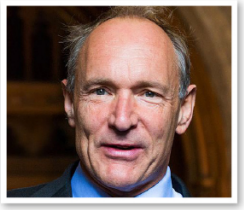
Technology pioneers



Ada Lovelace
first computer programmer



Alan Turing
computer science pioneer



Sir Tim Berners-Lee
creator of the World Wide Web, the system used to access the internet



Mark Zuckerberg
co-founder of the social-networking site Facebook

E-safety

Using technology to communicate online can be risky. Sharing personal information, such as names, dates of birth, addresses and passwords, with strangers can lead to identity theft and cyberbullying. Opening suspicious emails or messages can infect devices with malware such as Trojans, spyware, worms and viruses. Sharing personal information carefully and using antivirus software and firewalls to protect devices against malware are ways to stay safe online.

Glossary

antivirus	Software that finds and removes computer viruses.
browser	Software that allows you to look through and view websites.
data	Information that can be collected together and analysed.
device	A machine or object invented to carry out a specific task.
firewall	A program or part of a computer that prevents access to a device from unknown sources.
home page	The first page of a website that gives an overview of the rest of the site.
hyperlink	A connection that allows users to move easily between two web pages or documents.
inbox	An electronic folder that holds received emails.
internet	A global computer network that allows people to share information and communicate online.
malware	A piece of software that has been designed to damage a computer or device.
router	A device that can forward data to different parts of a network.
search engine	A computer program that can search the internet for an input word and display the search results.
trolling	Leaving offensive messages online to annoy or upset others.
Wi-Fi	Technology that allows electronic devices to connect to the internet wirelessly.

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