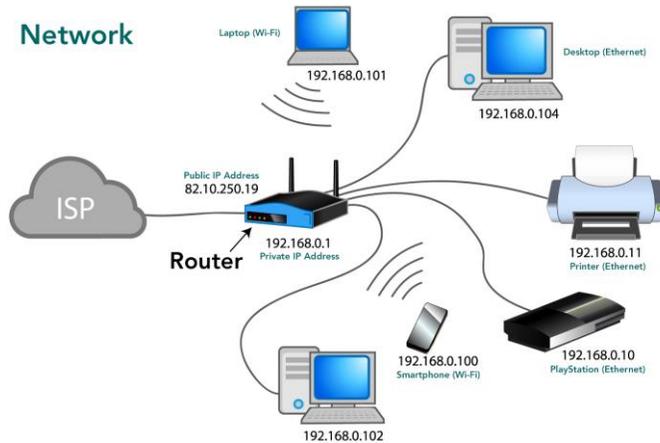
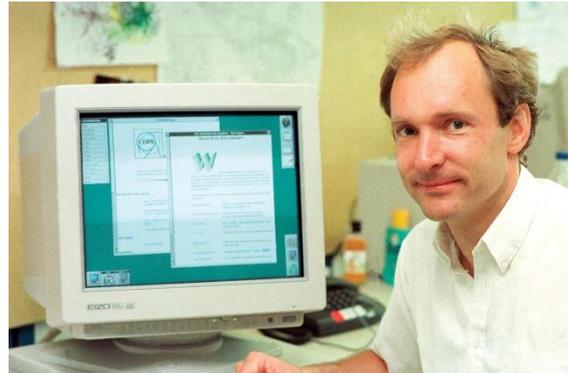




### Networks – what are they?

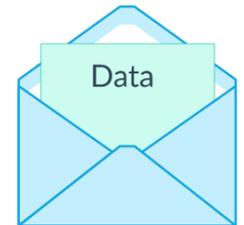


### The Internet and WWW



Sir Tim Berners-Lee, inventor of the WWW (not the internet!)

### Packets and Data transmission



A **network** is: two or more devices connected together for the purpose of sharing and communicating.

We share:

- Data (files, images, sounds, videos)
- Hardware – printers, storage, internet connections

Why:

- Its more efficient to share hardware
- Cost – it's cheaper
- Convenience
- Collaboration – the ability to work together.

You should remember that we are in the time of IoT (Internet of Things) meaning that virtually anything can be connected to a network, not just computers, tablets, phones and laptops.

Most people don't actually know what the internet is – the most common answer is "Google." **It's not Google!!**

The **internet** is: A global network of networks

The **WWW** is: A collection of information, connected together via hyperlinks.

The WWW is simply one example of **traffic** which can use the internet to get from source to destination.

Think of the internet like the road network – it connects places together. The WWW is one type of traffic (like a bus) but there are many different types of traffic which may use the road network. The same is true on the internet.

A network will usually consist of:

- Devices
- Cables or wireless connections
- Switches
- Routers (if connected to the internet)

Data will travel through many devices and connections on its journey to a destination and as such can be damaged by electromagnetic interference and other problems.

If data is corrupted then we must send it again. For this reason, **we break it into equally sized chunks** called "**packets**" so that it can be sent more quickly.

A packet contains data, a destination address, a source address, the packet number (so it can be reassembled) and some error correction data.

## Year 8 Computing – Networking

### Key Vocabulary and Definitions



	Meaning
Network	Two or more devices connected together for the purpose of sharing or communicating
Node	Any device connected to a network
Network Card	The hardware (chip or physical card) used to connect a device to a network. Can be wired or wireless
Switch	Hardware device used to connect devices together on an INTERNAL network
Router	Used to connect a network to the internet. Receives packets from the internet, forwards packets on to their destinations
Packet	A small, fixed sized chunk of data. Used to make sending of data across a network faster and more efficient than just sending the file as a whole
Packet Structure	Packets contain the data, source address, destination address, packet number and error correction data.
IP address	The address of a device on a network. Used to identify a device on a network for the purpose of packet sending and receiving.
Data Loss	Usually caused by collisions or electromagnetic interference. Data will be damaged in transit and must either be repaired using error correction methods, or simply sent again.
HTML	Hyper-Text Mark-up Language. The language used to create web pages.
Tag	A part of HTML. Tags are enclosed in angular brackets < > and usually are in pairs to show where the element starts and ends. For example, paragraphs : <p> some text </p>
Web Browser	Used to navigate between web pages and to display web pages to the user
Text Editor	Any program which can be used to perform basic text editing or coding tasks, such as Notepad.
Search Engine	A WEB SITE which is used to search for other websites
Indexing	The process of a search engine adding websites to its database so it can be later searched by users
Web-Crawling	The process of a search engine discovering new websites by using programs called "bots" to automatically follow hyperlinks and collect information about a site.
Phishing	A method of collecting user names, passwords and other personal details by tricking users into clicking a link in a fraudulent email.
Fake News	Any article which is not published by a reputable source, does not have reference or sources included or is purely speculative in nature.
Routing	The method or methods used to decide which is the <i>best</i> route for a data packet to take to its destination
Hyperlink	A link on a web page. When clicked, immediately takes you to the intended destination.