Computing Knowledge Organiser:

Computing Systems and Networks

Computing Systems and Networks:

A computer network is two or more computer systems that are connected with one another; all for the purpose of communicating data electronically.

Vocabulary:	Learnt in:	Definition:
Technology	Y1	Anything that helps us in our lives—often digital or electronic
Computer	Y1	A type of machine that processes information.
Information Technology	Y2	Any device that is a computer, has a computer inside or works with computers. They are used all around us.
Input	Y2	Something that goes into the process – data the computer receives (in).
Process	Y2	Any actions or steps that take place.
Output	Y2	Data that a computer sends out.
Connection	Y3	A link between two things.
Computer Network	Y3	A number of connections linking digital devices together.
Network Switch	Y3	A device that connects multiple devices on a network with one another.
Server	Y3	A computer that centrally manages the network and stores files.
Wireless Access Point	Y3	A wired device that sends and receives wireless signals for devices with wireless connectivity to the rest of the network
The Internet	Y4	A connection of computer networks—used to transport data from one computer to another.
Router	Y4	The equipment used to connect a network to the internet through a route.
World Wide Web [WWW]	Y4	Only one part of the Internet where we can visit web pages and websites.
Web Browser	Y4	An application for accessing the World Wide Web.
System	Y5	A set of things working together as part of a complex network.
Protocol	Y5	An agreed way of doing something.
Search Engines	Y6	A specially designed platform made to help find and sort web content such as words, images and videos.
Web Crawlers	Y6	A computer program that automatically fetches the contents of a web page.

Milestone Knowledge

Y1/Y2
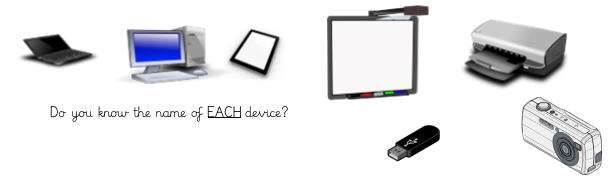
The **screen** shows what the computer is doing.

The **keyboard** lets you type letters and numbers.

The **mouse** lets you select and move objects.

The **base unit** stores and processes information.

These are all **information technology.** They are computers, have a computer inside, or work with computers.

Do you know the name of EACH device?

We may find **information technology** in shops, offices, cafes, restaurants and in the home.

Where might these things be found?

A **barcode** contains a code to be read quickly by a computer.

Do you know where to find the keys on a **key board**?

Have a go on: https://www.everyschool.co.uk/i.c.t.-key-stage-1-navigation-skills.html

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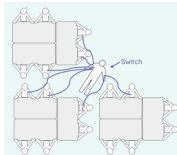
Milestone Knowledge

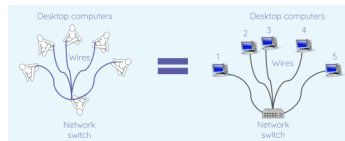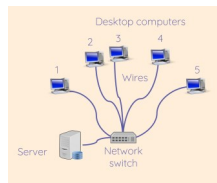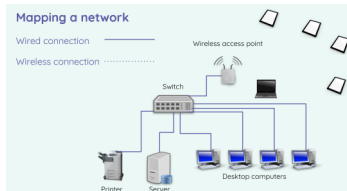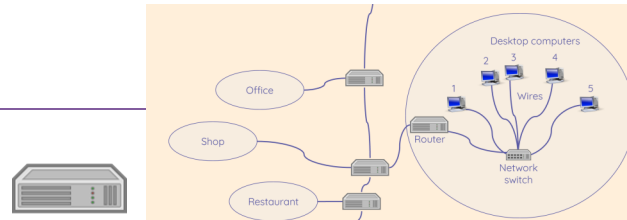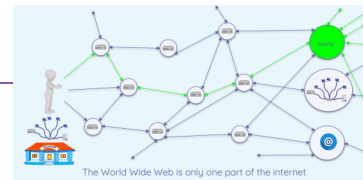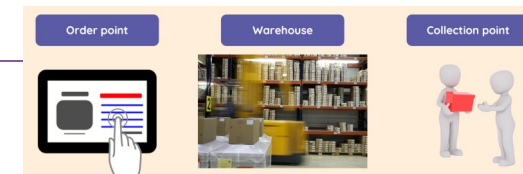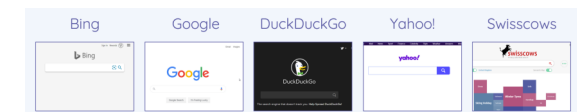| Y3	Y4	Y5/Y6
In a digital device, we start with an **input** (such as pressing a key), a **process** occurs (often through programs) and then an **output** is produced (such as the letter appearing on screen).	Ensure you fully understand all of the 'Y3 Milestone Knowledge' before revisiting your Y4 knowledge. Networks can connect to other networks in different places.	[Y5] A **system** is a connection of computers. They are built using a number of parts and always feature inputs, processes, and outputs. **Digital systems** are used all around us including Puffin Crosses, Amazon Smart Lockers and collection points.
A **computer network** is made up of a number of devices. Messages are passed through multiple connections . The **network switch** doesn't need to read the message. It just reads who the message is going to and then passes the message on. The **network switch** is connected to every computer and can pass information to every computer quickly.	A **router** allows us to connect a network to the **internet**. A route is a way of getting from one place to another. The internet is connected by lots of routers. The World Wide Web is only one part of the internet	[Y5] A **protocol** is needed as an agreed way of doing something. Computers communicate using agreed protocols. Computers use special addresses called IP **addresses**. This is an example of an IP address. 192.168.1.200
This is a visual representation of a **computer network**.	The 'World Wide Web' is only one part of the Internet, where we can visit web pages and websites. Websites are stored on **servers** all around the world. www.bbc.co.uk This is stands for 'World Wide Web' This is the domain name (bbc.co.uk)	[Y6] These websites are all examples of **search engines**. Bing Google DuckDuckGo Yahoo! Swisscows
A **server** may be added to the network and is a special computer that manages the network and can also store files. We have a server in our school!		[Y6] **Search engines** use **web crawlers** to create an index of the web. They take a copy of the web pages they visit to build up the search engine's index. This is stored on the **search engine's servers**. They are stored in huge **data centres** around the world.
	We use a **web browser** to browse web pages on the Internet— all of these web browsers can be used. This includes Chrome and Safari.	[Y6] **Search engines** rank results to ensure they are most relevant. Some factors, including the name of the site, the presence of the search term on the site, and the number of links to a site, influence the order in which results are delivered.
A **wireless access point** is any device connected to a wired network, which sends and receives wireless signals for devices with WiFi connectivity. Network cables and sockets are needed to connect the school network.	We must look carefully at the **Copyright** of the information we use on the Internet. Remember you can't believe ALL of the information that you see on the Internet.	[Y6] The internet is amazing to use for **communication**. You must consider if the information is: private/public, one-to-one or one-to-many and if there any age limits.