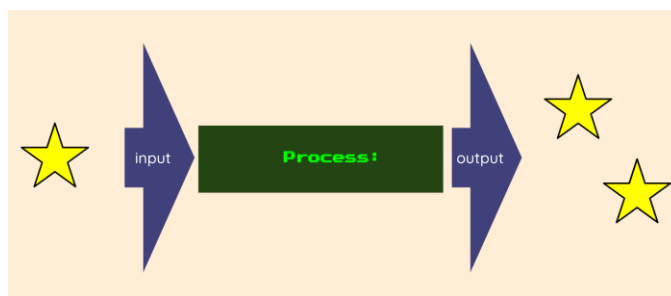


Knowledge Organiser for Year 3

Big question: How does a digital device work?

KS2 National curriculum specification

- Pupils understand that **computers** (in various forms) generally accept **inputs** and produce **outputs** and can give examples of this.
- Pupils recognise - and can describe - some of the services offered by the **Internet**, especially those used for communication and collaboration.



In this unit, the children will:

To develop their understanding of digital devices with an initial focus on inputs, processes, and outputs.

To compare digital and non-digital devices.

To be introduced to computer networks, including devices that make up a networks infrastructure e.g. wireless access points and switches.

To discover the benefits of connecting devices in a network.

Key vocabulary:

Device	Something that has been made for a particular purpose.
Digital Device	Digital devices use processing – there's more than just an on-off function. Digital devices have an input, process, output (IPO).
Input	Something that sends a message to the device. E.g. you press a button on the keyboard.
Input Devices	Keyboard, joystick, mouse, webcam, microphone, touch screen, track ball, digital camera.
Process	The device acts on the message. E.g. the computer follows a program that tells it what to do when the keyboard is pressed.
Output	Something that is sent out by the device. E.g. The letter that you have typed on the screen.
Output devices	Screen/monitor, printer, headphones, projector, speaker, smartboard.
Internet	A network of connected computers.
World wide web	All of the web pages on the Internet, accessed using a web browser.
Search	Finding data that satisfied conditions.
Browser	A computer program used to access the World Wide Web (e.g. you can use chrome, safari, internet explorer browsers to search on the WWW).
Network	A group of computers that are connected.

Connections and Networks	Network Devices
-In computing, a connection describes a link between	-Network switch: a device that helps

the computer and something else. For example, a computer may be connected to the internet through wires, a mobile data system, or WiFi.

-A computer network is a set of connections that join computers together.

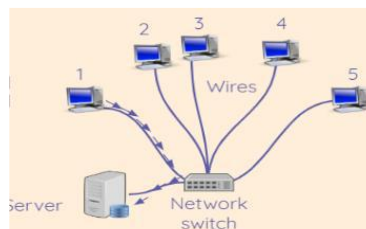
-The computers in the network can send and receive information to one another.



different devices on a network to be connected with each other.

-Server: a computer that manages the network and stores files.

Wireless access point (WAP): a device, connected to a wired network, that sends and receives wireless signals to and from devices.



Why Networks are useful

-Computer networks allow us to send and receive information between computers that are in different places.

-Networks can help us to communicate quickly and easily.

-Networks can also join computers to shared devices, like scanners and printers.

-The internet is a global network of computers.

-If information is shared on a network, it helps to reduce the risk of data being lost e.g. if one computer breaks.



Teacher Subject Knowledge:

Prior Knowledge	<p>Children should already know:</p> <ul style="list-style-type: none"> -Technology is something that has been made by people to help us. -Information Technology (IT) includes computers and things that work with computers.
Information for each lesson	<p>Lesson 1: Understand digital vs. non-digital devices. Digital devices process data beyond simple on/off states. Introduce Input–Process–Output (IPO), linking to maths.</p> <p>Lesson 2: Explore inputs and outputs of digital devices. Show how one input can create multiple outputs (e.g., video → screen + sound) and multiple inputs can lead to one output (e.g., keyboard + mouse → document).</p> <p>Lesson 3: Use a digital paint program; practise draw, fill, edit, undo functions.</p> <p>Lesson 4: Learn how data flows through a network and the role of a network switch.</p> <p>Lesson 5: Introduce server (file storage) and wireless access points for connecting devices.</p> <p>Lesson 6: Understand how main network devices (switch, server, router, wireless access point, printer) connect. Discuss layout with IT technician if needed.</p>
Resources	<p>Resources</p> <p>Input devices: Keyboard, mouse, USB stick, CD, scanner, camera, microphone.</p> <p>Output devices: Monitor, printer, speakers, headphones.</p>
Links to learning content	<ul style="list-style-type: none"> • See One Drive for curriculum overview and PowerPoint: Year 3.