Bomere and the XI Towns Federation Knowledge Organiser - Computing

Topic: Computing systems and networks—Connecting computers	Class/Year Groups: Grinshill	Term: Autumn

What you already know?

This unit progresses learners' knowledge and understanding of technology by focusing on digital and non-digital devices, from the following units; Technology around me Year 1 and IT around us Year 2, and introducing the concept of computers connected together as a network. Following this unit, learners will explore the internet as a network of networks.

What you will learn:

Networks and Network Devices

Connections and Networks

-In Computing, a connection describes a link between 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 joins computers together.

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

Network Devices

-Network switch: a device that helps 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.

Digital Devices – Input, Process Output (IPO)

-A device is something that has been made for a particular purpose (it has a special use).
-Digital devices use processing (have a process) There is 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, web cam, 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.

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. Imagine how different life would be without the internet!

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

Vocabulary:

input	something that sends a message to the device
input devices	keyboard, mouse, webcam, microphone
process	when the device acts on a message
output	something that is sent our by the device
output devices	screen, printer, headphones, speaker

National Curriculum Objectives:

- use sequence, selection, and repetition in programs; work with variables and various forms of input and output

- understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration

- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information