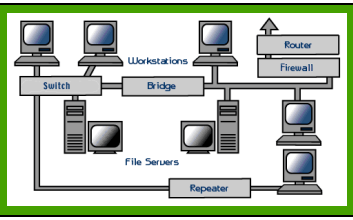
Ashwell Primary School
Computing Curriculum
Internet, Technology, Networks, Hardware & Software
Progression - Knowledge & Skills Organiser



Year 1 – Internet, Technology, Networks, Hardware & Software

Core Knowledge / skills to be acquired: (Unit 1.9 – Technology Outside School)	**Key Vocabulary:**
▪ To walk around the local community and find examples of where technology is used. ▪ To record examples of technology outside school.	**Technology -** Science and engineering knowledge put into practical use to solve problems or invent useful tools.
Curriculum Enrichment / Cultural Capital Opportunities / key questions ▪ What is technology? ▪ How does technology make our lives easier?	
Prior knowledge / skills this builds on: (EYFS Framework)	**What comes next: (Unit 2.5 – Effective Searching)**
▪ Children across the EYFS use a range of technology such as IPads, digital cameras as well as object such as phones in role play etc.	▪ To understand the terminology associated with searching. ▪ To gain a better understanding of searching on the Internet. ▪ To create a leaflet to help someone search for information on the Internet.

Year 2 – Internet, Technology, Networks, Hardware & Software

Core Knowledge / skills to be acquired: (Unit 2.5 – Effective Searching)	**Key Vocabulary:**
▪ To understand the terminology associated with searching. ▪ To gain a better understanding of searching on the Internet. ▪ To create a leaflet to help someone search for information on the Internet.	**Internet -** A global computer network providing a variety of information and communication facilities, consisting of interconnected networks and computers. **Search -** Look for information in a database or the World Wide Web using a search engine. **Search Engine -** A program that searches for and identifies items on the World Wide Web.
Curriculum Enrichment / Cultural Capital Opportunities / key questions ▪ How can I search the Internet?	
Prior knowledge / skills this builds on: (Unit 1.9 – Technology Outside School)	**What comes next: (Unit 3.5 – Email including E-Safety)**
▪ To walk around the local community and find examples of where technology is used. ▪ To record examples of technology outside school.	▪ To think about different methods of communication. ▪ To open and respond to an email using an address book. ▪ To learn how to use email safely. ▪ To add an attachment to an email. ▪ To explore a simulated email scenario.

Year 3 – Internet, Technology, Networks, Hardware & Software

Core Knowledge / skills to be acquired: (Unit 3.5 – Email including E-Safety)

- To think about different methods of communication.
- To open and respond to an email using an address book.
- To learn how to use email safely.
- To add an attachment to an email.
- To explore a simulated email scenario.

Key Vocabulary:

Communication - The sharing or exchanging of information by speaking, writing, or using some other medium such as email.
Email - Messages sent by electronic means from one device to one or more people.
Compose - To write or create something.
Send - To make an email be delivered to the email address it is addressed to.
Attachment - A file, which could be a piece of work or a picture, that is sent with the email.
Address book - A list of people who you regularly send an email to.
CC - A way of sending a copy of your email to other people so they can see the information in it.
Formatting - Allows you to change the way the text of an email looks. For example, you can make the text bold or underline it.

Curriculum Enrichment / Cultural Capital Opportunities / key questions

- What is email?
- What should I do if I receive an email that makes me upset or scared?
- What information can I send in an email?

Prior knowledge / skills this builds on: (Unit 2.5 – Effective Searching)

- To understand the terminology associated with searching.
- To gain a better understanding of searching on the Internet.
- To create a leaflet to help someone search for information on the Internet.

What comes next: (Unit 4.7 – Effective Searching)

- To locate information on the search results page.
- To use search effectively to find out information.
- To assess whether an information source is true and reliable.

Year 4 – Internet, Technology, Networks, Hardware & Software

Core Knowledge / skills to be acquired: (Unit 4.7 – Effective Searching)

- To locate information on the search results page.
- To use search effectively to find out information.
- To assess whether an information source is true and reliable.

Key Vocabulary:

Internet - A global computer network providing a variety of information and communication facilities.
Internet browser - A software application used to locate and display Web pages.
Search - To look for information. In this case on the Internet.
Search engine - A program that searches for and identifies items in a database. Used especially for finding sites on the World Wide Web.
Spoof website - Website spoofing is the act of creating a website, as a hoax, with the intention of misleading readers that the website has been created by a different person or organisation.
Website - A set of related web pages located under a single domain name.

Curriculum Enrichment / Cultural Capital Opportunities / key questions

- What is a search engine?

Prior knowledge / skills this builds on: (Unit 3.5 – Email including E-Safety)

- To think about different methods of communication.
- To open and respond to an email using an address book.
- To learn how to use email safely.
- To add an attachment to an email.
- To explore a simulated email scenario.

What comes next: (Unit 4.8 – Hardware Investigators)

- To understand the different parts that make up a computer.
- To recall the different parts that make up a computer.

Year 4 – Internet, Technology, Networks, Hardware & Software

Core Knowledge / skills to be acquired: (Unit 4.8 – Hardware Investigators)

- To understand the different parts that make up a computer.
- To recall the different parts that make up a computer.

Key Vocabulary:

Motherboard - A printed circuit board containing the main parts of a computer or other device, with connectors for other circuit boards to be slotted into.
CPU - The part of a computer in which operations are controlled.
RAM - Allows programs to store information to help the computer run more quickly.
Graphics card - A printed circuit board that controls the output to a display screen.
Network card - An electronic device that connects a computer to a computer network.
Monitor - A screen which displays an image generated by a computer.
Speakers - a device for letting you hear sounds generated by the computer.
Keyboard and mouse - external devices

Curriculum Enrichment / Cultural Capital Opportunities / key questions

- What is the difference between hardware and software?

Prior knowledge / skills this builds on: (Unit 4.7 – Effective Searching)

- To locate information on the search results page.
- To use search effectively to find out information.
- To assess whether an information source is true and reliable.

What comes next: (Unit 6.6 – Networks)

- To learn about what the Internet consists of.
- To find out what a LAN and a WAN are.
- To find out how the Internet is accessed in school.
- To research and find out about the age of the Internet.
- To think about what the future might hold.

Year 6 – Internet, Technology, Networks, Hardware & Software

Core Knowledge / skills to be acquired: (Unit 6.6 – Networks)

- To learn about what the Internet consists of.
- To find out what a LAN and a WAN are.
- To find out how the Internet is accessed in school.
- To research and find out about the age of the Internet.
- To think about what the future might hold.

Key Vocabulary:

Internet - A global computer network providing a variety of information and communication facilities consisting of interconnected networks using standardized communication protocols.
World Wide Web - An information system on the Internet which allows documents to be connected to other documents by hypertext links, enabling the user to search for information by moving from one document to another.
Network - Several interconnected computers, machines, or operations.
Local area network (LAN) - A computer network that links devices within a building or group of adjacent buildings, especially one with a radius of less than 1 km.
Wide area network (WAN) - A computer network in which the computers connected may be far apart, generally having a radius of more than 1 km.
Router - A device which forwards data packets to the appropriate parts of a computer network.
Network cables - Used to connect and transfer data and information between computers and routers.
Wireless - The ability to transmit data from one device to another without using wires.

Curriculum Enrichment / Cultural Capital Opportunities / key questions

- What is the difference between the Internet and the World Wide Web?
- What is the difference between a LAN and a WAN?
- Who is Tim Berners-Lee?

Prior knowledge / skills this builds on: (Unit 4.8 – Hardware Investigators)

- To understand the different parts that make up a computer.
- To recall the different parts that make up a computer.

What comes next: (Unit 6.8 – Understanding Binary)

- To examine how whole numbers are used as the basis for representing all types of data in digital systems.
- To recognise that digital systems represent all types of data using number codes that ultimately are patterns of 1s and 0s (called binary digits, which is why they are called digital systems).
- To understand that binary represents numbers using 1s and 0s and these represent the on and off electrical states respectively in hardware and robotics.

Year 6 – Internet, Technology, Networks, Hardware & Software

Core Knowledge / skills to be acquired: (Unit 6.8 – Understanding Binary)

- To examine how whole numbers are used as the basis for representing all types of data in digital systems.
- To recognise that digital systems represent all types of data using number codes that ultimately are patterns of 1s and 0s (called binary digits, which is why they are called digital systems).
- To understand that binary represents numbers using 1s and 0s and these represent the on and off electrical states respectively in hardware and robotics.

Key Vocabulary:

Base 10 - The number system commonly used in day-to-day life. Using the digits 0,1,2,3,4,5,6,7,8,9 to make. Also known as decimal or denary.
Base 2 - A number system based only on the numerals 0 and 1. Also known as binary. The digits 1 and 0 used in binary reflect the on and off states of transistors.
Binary - See Base-2.
Bit - A single 0 or 1 in the binary system.
Byte - 8 bits. **Kilobyte (KB)** - 1024 bytes. **Megabyte (MB)** - 1024 KB.
Gigabyte (GB) - 1024 MB. **Tetrabyte (TB)** - 1024 GB
Decimal - See Base-10.
Denary - See Base-10.
Digit - A single integer used to show a number.
Integer - Any whole number. This includes negative and positive numbers but not fractions or decimals.
Integer - Any whole number. This includes negative and positive numbers but not fractions or decimals.
Machine code - The code that signals to a computer which transistors should be on or off. Machine code is written in binary.
Nibble - 4 bits.
Switch - A component that can be one of two states at any time: on or off.
Transistor - A tiny switch that is activated by the electronic signals it receives.
Variable - A variable is used in programming to keep track of things that can change while a program is running. A variable must have a name. The value of the variable is the information to store.

Curriculum Enrichment / Cultural Capital Opportunities / key questions

- How does binary relate to the programs that you use or create?
- How does binary relate to computer memory?
- How would you write the numbers 0 to 10 in binary?

Prior knowledge / skills this builds on: (Unit 6.6 – Networks)

- To learn about what the Internet consists of.
- To find out what a LAN and a WAN are.
- To find out how the Internet is accessed in school.
- To research and find out about the age of the Internet.
- To think about what the future might hold.

What comes next: (Key Stage 3 – Computing)

- To understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]