Beech Hill Primary School Knowledge Organiser

Topic: Computing – Digital literacy	Year group	Term
Digital Foundations 4	Year 4	Autumn 1 6 sessions

Background knowledge

Digital Foundations 4 has been designed to provide children with a strong foundation in the knowledge and skills required for their computing journey over the coming year. The six steps in this unit contain concepts and activities that will develop children's understanding of: technology and digital devices; operating system familiarity; mouse and keyboard skills; understanding icons and symbols; creating digital artefacts; Internet safety and awareness; and digital citizenship. The steps in this unit can be covered flexibly in order to meet the specific needs of the children. Teachers may choose to teach all six steps or to choose those most relevant to their setting.

In order to teach this unit confidently, a good subject knowledge of the IPO model for computing is essential. This will support you in teaching the children about how a computer takes data from an input device and processes it to produce an appropriate, meaningful output. An understanding of operating systems and how these enable a computing device to complete tasks is also required, including knowledge of how to recognise the operating system that runs on each of the devices that the children will be using. To support children in their learning about how to format digital content, a solid grasp of how word-processing software works would be beneficial. Included in each step is a CPD in 3 video and CPD Quick Guide. These aim to support teachers in building a confident subject knowledge prior to embarking on the step with the children.

What should I already know?

It would be beneficial for children to have prior knowledge of what a digital device is and how these can be used in different ways to create, store and manipulate digital content. It could support their understanding to have previous knowledge of how parts of a computing device can be connected. They may also benefit from prior learning around the online world and how their behaviour online can have an impact, both on themselves and those around them.

National Curriculum Objectives / Key Skills	The Journey
NC Children should be taught to: use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact; 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. Key Skills This unit provides children with knowledge and skills that can be applied in their use of technology throughout curriculum, for example: * word processing to create digital content for other curriculum subjects; * accessing files and programs for learning; * troubleshooting technical difficulties that they may experience.	1. To understand elements of the IPO model for Computing. (IPO in action investigation cards) 2. To understand how and why components of a computing device are connected. (Making connection activity sheet; and for the HA, use the Wired or Wireless activity). 3. To understand the role of an operating system in organising digital files. To be able to locate digital files in order to complete tasks. (access, modifying and save a digital file) 4. To recognise an increasing range of common shared icons and their functions. (Identify icons sheet and Icon designer sheet) 5. To understand aspects of mice. To use two hands on a keyboard to type letters, numbers and symbols. (Terrific typing activity) 6. To use formatting tools within a document to manipulate the content. To understand that word processing programs have spelling and grammar tools to help with editing a document. (Inserting and formatting images)

Outcomes

This unit begins your children's journey towards the following key milestone concepts:

* Children will understand the presence of technology in daily life, recognise digital devices and demonstrate responsible usage habits.
* Children will confidently interact with technology by learning to use a mouse or trackpad and a computer keyboard effectively for navigation and input.
* Children will identify the basic components of an operating system and demonstrate an ability to navigate through simple tasks.
* Children will create, save, open and close files.
* Children will recognise and use icons for specific tools within a program.

Throughout the unit, children will:

I can name some input and output devices.
I can explain the stages of the IPO model for computing.
I can give an example of the IPO model for computing.

I know that a computing device is made of connected parts and can be connected to other computing devices.
I can describe different ways that computing devices can connect to each other.
I know some of the advantages and disadvantages of different connections.
I can explain some reasons why computing devices might need to be connected to each other.

I can identify the operating system of my device.
I know that files and programs can be organised and accessed in different ways.
I can navigate the operating system to find a file and open it.
I can modify the content in a file and save the results.
I can select a file in a folder and delete it.

I can name some tools and actions available on computing devices.
I can recognise the icons that are used to represent common tools and actions.
I know that the tools and actions available on a device or in a program are not always the same.

I know that there are different types of click available when using a mouse or trackpad.
I can explain the functions of different types of click.
I can find specific keys on a keyboard.
I can use the keys on a keyboard to type with increasing speed and accuracy.

I can use a mouse or trackpad to select words.
I can change the appearance of text on a page.
I know that word processing software has tools to check the spelling of text on a page.

Key Vocabulary

central processing unit (CPU)	The part of the computer that receives data from input devices or programs and interprets what needs to happen next.
digital device	Any piece of equipment that contains a computer or microcontroller, such as a smartphone, smartwatch or laptop.
input	Data or information sent to a computer to be processed.
input - process - output (IPO) model	A set of steps or events that allow a computer to work/carry out instructions.
output	Data that has been processed and generated.
process	A program actively running on a computer.
program	A set of instructions that a computer uses to perform a specific function.

Bluetooth	Connects two or more devices together wirelessly.
broadcast	A signal sent to a receiver, such as a radio station to a radio in a house or car.
cable	A plug or connector made up of a series of wires that send power or data to devices.
component	Parts of a device, both internally and externally.
connection	A link between a device from a plug or wirelessly.
device	An electronic piece of equipment that has been designed to carry out a particular job or function.
digital	A system that is sending and receiving information through the use of numbers.
distance	The space between digital devices to pass a signal.
location	Where you might find something on a digital device.

signal	A way of transmitting data through an electrical pulse.
share	Sending information to someone else.
strength	How reliably and quickly a signal can be passed from one device to another.
wireless	Instead of using cables to connect, wireless devices send information through electronic signals, such Wi-Fi, radio waves or Bluetooth.

access	Given permission to use, such as entering a password when you open a device.
browse	When someone using a device is scanning and reading data.
delete	Remove text, an object or a file from the device.
desktop	The main screen where icons and programs are displayed and organised.
device	An electronic piece of equipment that has been designed to carry out a particular job or function.
digital	A system that is sending and receiving information through the use of numbers.
file	Somewhere information and data are stored on a computer.
icon	A small image or symbol representing a file, function or program.
modify	Making changes.
open	To view or access something, such as a file, when selected.

operating system	Software that controls how a computing device works and manages all the programs you want to use.
program	A set of instructions given to a computer device so that it can function properly.
save	Storing a file so that it can be accessed again at another time. Files can be saved directly on a device or externally onto something such as a USB (universal serial bus).

action	Part of a digital device that carries out the tools function.
device	An electronic piece of equipment that has been designed to carry out a particular job or function.
icon	A small image or symbol representing a file, function or program.
program	A set of instructions given to a computer device so that it can function properly.
symbol	Represents the tool or action with a picture.
tool	Part of digital software that allows you to carry out its given function.

accurate	A skill in precisely typing on the keyboard.
click	The act of pressing and releasing the mouse or trackpad buttons.
function key	Controls some of the settings on your computer, for example the screen brightness or speaker volume.
keyboard	A device that allows the user to input text, numbers and symbols.
left-click	The button on the left-hand side of the mouse or trackpad.
menu	Contains a list of actions or tools.
mouse	A handheld input device that controls a cursor on a device's screen.
option	A list or variety of actions and tools to choose from.
right-click	The button on the right-hand side of the mouse or trackpad.
trackpad	A built-in mouse that lets the user control a cursor on a device's screen.
type	The act of pressing keys on a keyboard to input characters.

column	A range of cells that go down (vertically) on a spreadsheet. Columns are identified by letters, e.g. column A, column R.
cursor	A moveable symbol controlled by a mouse or trackpad used to drop, click or drag items.
edit	To make changes to or correct errors in digital content, such as text, images or videos.
font	A set of text characters in the same style and size.
format	The appearance or presentation of text, objects or images.
grammar	The rules in a language to help words form a sentence.
image	A picture or photograph added to a document.
input	Data or information sent to a computer to be processed.
insert	To add something into a document or file.
manipulate	Changing the size of a shape or object on a computer.

menu	Found as part of the menu bar, it is a list of choices or commands.
page	A space where information can be typed on a word processing document.
spelling	A word processing tool that can delete a mistake, replace it with the correct alternative and help you stay accurate.
text	A group of letters, words or other symbols that can be typed, formatted and read.
toolbar	A row of buttons with software functions, often found at the top of a word processing page.
tools	Used to change the appearance of text and images.

Question of the week.

1. What does CPU stand for? Or, can you describe what a CPU does, even if you can't remember what it stands for?
2. Give me an example of a wireless device and where it is used.
3. Match these words to their meaning. (accessing, modifying, saving, deleting / opening a piece of work, editing a piece of work, keeping our work for next time, getting rid of something we don't need).
4. What do these common icons represent? (save, home, undo, print)
5. Tell me any letters on the (top line of a keyboard / middle line of a keyboard / bottom line of a keyboard).
6. Tell me three different way you can format a word? (eg. Size, font, colour, position)