Big Ideas

Term: Autumn 1	Year group: 1	Subject: Computing	Topic: Technology around us

Prior Knowledge:

Subject specific (Tier 3) vocabulary: technology, man-made, digital, screen, mouse, keyboard, program, click and drag, cursor, internet safety.

Key Knowledge

Knowledge	Skills	Computer Components
Technology can help us. Technology is built for a purpose (e.g. pencil sharpener) Digital technology creates and stores information. A computer is an example of digital technology. Choices are made when we use technology. Rules are needed when using technology. Hold the device carefully and use it gently. Do not have food or drink near the device. Only use programs that you should be using. Take turns with a partner and stop using the device when someone is speaking to you.	Recognise that technology can be used in different ways. Identify the main parts of a computer. Use a mouse in different ways (click and drag, click on icons). Use a key board to type. Use the keyboard to edit text. To show how to use technology effectively. Save work. <u>Using a mouse</u> Clicking the left button lets us select something. Clicking the left button twice quickly, lets us open files and programs. Clicking the right button displays a menu. Holding the left button down allows us to drag objects. The scroll wheel between the buttons allows us to scroll up and down a page.	Desktop computers need to be placed on a surface (desk or table) Laptop computers are portable (they can be moved around). The screen (or monitor) displays what the computer is doing. The mouse allows you to select (by clicking the left button) and move objects. Laptops have a trackpad which can be used instead of a mouse. The keyboard lets you type letters and numbers. Computers run different programs to do different tasks. (Microsoft, PowerPoint)

End point

Children will explain how technology can help them in their own lives. They can describe different components of a computer (keyboard, mouse), They will talk about how to use technology responsibly.

Big Ideas

Term: Autumn 1	Year group: 2	Subject: Computing	Topic: Information Technology Around us

Prior Knowledge: In year 1, children learnt about what technology is and how it is used in school.

Subject specific (Tier 3) vocabulary: information technology, computer, device, barcode, scanner, communication, entertainment, appliances, signal, E-safety.

Key Knowledge

Technology has been made by people to help us.
Information technology includes computers (desktop computers, laptops, games consoles and phones) and things that work with computers (card readers, digital cameras and usb sticks).
Information technology is in lots of important items in our home and around the world.
There is lots of information technology in the home: the control panel for the heating, washing machine and microwave.
Some information technology in the home helps us to communicate: internet router, telephone.
Some information technology in the home is used to entertain us: toys, consoles, computer games and DVD players.
Information technology can be found in shops: barcode scanners and tills work together.
Information technology can be found at the bank: bank cards, card readers and cash machines work together so that customers can access their money.
Information technology can be found on the street: traffic lights, buttons and signals work together to help us to cross the road safely.
Information technology helps us to do things quicker and easier.
Information technology helps us to stay safe.
Information technology helps us to communicate and have fun.
Safety rules:
Games and apps that we use must be age appropriate.
Always sit down when using handheld devices: they can be dropped.
Don't use devices at social times: remember your manners.
Stick to using technology at agreed times. Too much screen time is not good for us.

End point

Children will discuss how information technology improves our lives

Big Ideas

Term: Autumn 1	Year group: 3	Subject: Computing	Topic: Connecting Computers

Prior Knowledge: Digital technology is something that has been made to help us. Information technology includes computers and things that work with computers.

Subject specific (Tier 3) vocabulary: digital device, input, process, output, connection, network, network switch, server, WAP, E-safety

Key Knowledge

Knowledge	Definitions
Digital devices have an input, process and output. Information and data can be shared across networks. Many devices are used to create networks. A device is made for a particular purpose (more than an on-off function). Digital devices have an input, process, output (IPO) Input– a message is sent to the device. (pressing a button on a keyboard) Process - it follows a program that tells it what to do. Output – the end result of the process. (the letter appears on the screen). A connection describes a link between the computer and something else. A computer network is a set of connections that joins the computers together. The computers in a network can send and receive information to one another. Networks help us to communicate quickly and easily. Networks can join computers to shared devices like scanners and printers. The internet is a global network of shared computers. If information is shared or stored on a network, it reduces the risk of data being lost e.g. if one computer breaks.	Input devices: devices that you can use to tell the device what you want it to do: keyboard, mouse, web cam, digital camera, microphone, touch screen. Output device: devices that receive: screen, printer, headphones, projector, speaker. Network switch: a device that helps different devices on a network to be connected with each other. Server: a computer that manages networks and stores files that all the computers can access. Wireless access point (WAD): a device connected to a wired network, that sends and receives wireless signals to and from devices.

End point

Children can explain the benefits of connecting devices in a network.

Big Ideas

Term: Autumn 1	Year group: 4	Subject: Computing	Topic: The Internet

Prior Knowledge: Children have learnt about networks and the benefits of computers being connected to a network. They have learnt that digital devices have and input, process and output.

Subject specific (Tier 3) vocabulary: network, internet, World Wide Web, router, security, website, webpage, browser, domain, reliable

Key Knowledge

Knowledge	Definitions
The internet is a **network** of networks that connects computers around the world. The World Wide Web is a **system** on the internet that has websites and webpages. The World Wide Web can be accessed through the internet. A router is something that finds a route between networks connecting them. Networks have security features that mean that they can block or allow messages and requests. This means that data and information can be kept safe. Some content is protected on the internet. Not all information on the internet is accurate. Ownership and reliability The content on the internet may belong to different people or companies for example the person who wrote it or the company who published it. The content may be copyrighted meaning that other people can not use it without their permission. Not all of the information that we see or hear on the internet is reliable. Some of it maybe inaccurate due to people misleading or misunderstanding. Inaccurate information can quickly spread. This is known as fake news. We should check multiple sources to check the information is correct (verify).	World Wide Web: the part of the internet where we can visit webpages and websites. Websites are a set of webpages. Webpages may contain different features e.g. a title, links to other pages, images, videos and text. Webpages and websites can be found using web addresses (domains) usually split into three parts: 1. WWW. 2. Name of the organisation or topic 3. Type of organisation/location .co.uk: a company located in the UK. .gov.uk: used by the UK government. .com: used by many big companies selling products .org: means organisation and is used by charities and educational establishments. .sch.uk: used by schools in the UK. Web browsers e.g. Google Chrome, Internet Explorer, help us to find pages on the internet.

End point

Children will evaluate online content to assess how honest, accurate, or reliable it is and understand the consequences of false information.

Big Ideas

Term: Autumn 1	Year group: 5	Subject: Computing	Topic: Sharing Information

Prior Knowledge: Children have previously learnt that computers have input, processing and output components. They have learnt that the internet is a network or networks and websites and webpages can be accessed on the internet.

Subject specific (Tier 3) vocabulary: system, input, output, connection, digital, process, components, network, protocols, packets, IP address, domain name server, routers, collaboration, remix, reuse, copyright

Key Knowledge

Knowledge	Definitions
Computers can be connected together to form systems. We can save work to a server so that it can be accessed from a device that is linked to that network. Computers communicate with other devices. Computers on a network can connect to a server. A router connects the network to the internet. Information is transferred across the internet. Data is transferred using agreed protocols (methods). Connections between computers allow us to access shared files and work together. The internet allows people in different places work together on the same document (collaboration). The internet allows different media to be shared. Chat functions can be used to communicate with other collaborators. Internet collaborations can be public or private. There are rules about sharing information and copyright prohibits sharing of some material. When building on someone else's work, you need to make sure that you have the appropriate permission and are not in breach of copyright rules.	Input – a set of instructions to perform a task Process – the action being performed Output – the result of the actions. Data Packets – Information broken down into small parts: where it is going, where it is from and how to reassemble it. Collaboration – working together to reach a shared goal such as a project. Ip address - Internet protocol address. Like a postcode for computers so that they can identify each other. Switch - A device connecting many other devices so they can act as a network. Router - A simpler form of a switch. DNS - Domain Name System. It turns a user-friendly domain name into an IP address. Domain – www.pippins.slough.sch.uk Protocol – An agreed way of doing something.

End point

Children will be able to discuss the pros and cons of working with others on a shared document and explain how information is transferred between systems and devices.

Big Ideas

Term: Autumn 1	Year group: 6	Subject: Computing	Topic: Internet Communication

Prior Knowledge: Children have worked collaboratively on a single document and have learnt that the internet is a network of networks that enables us to access websites and webpages on the World Wide Web.

Subject specific (Tier 3) vocabulary: internet, World Wide Web, search engine, browser, keyword, Tim Berner-Lee, ranking, crawlers, algorithm.

Key Knowledge

Knowledge	Definitions	
A search engine is a program that finds information on the internet based on the words entered. Search engines use crawlers to find information and store it in a huge index. When searching, we need to use keywords carefully to find the information that we are looking for. Websites are ranked by search engines according to how well the site is written, how frequently it is updated and how popular it is. Algorithms are used to look for clues for what you are searching for including spelling mistakes. Different search engine will give different results because they use different algorithms. We can communicate with other people online in many different ways: video calling, emailing, social media, messaging and gaming. Sometimes, what we write or say can be seen by everyone: this is known as public communication. Sometimes, what we write and say can only be seen by specific people: this is called private communication. Some communication is one-way (videos on a website) or two-way (a video call). We should consider if public or private communication is most appropriate each time we communicate online. Tim Berners-Lee invented the World Wide Web.	Google	the most popular search engine.
	Bing	is a search engine by Microsoft
	Swisscows	is a family friendly search engine
	Duckduckgo	is a family friendly search engine
	Yahoo	was the most popular search engine before Google.
	Internet	A global communication network
	WWW	World Wide Web
	Search Engine	Search engines scour the WWW to find the information we are looking for.
	Browse	Searching through the World Wide Web.
	Keyword	Words types into a search engine to find information.
	Crawling	Search engines scour the internet looking for information. This is called crawling.
	Indexing	The search engine categories information on a website through keywords and create indexes. An index is different for each search engine.
	Algorithm	A set of rules to be followed.
	Ranking	Search results are ranked so that the most likely results appear first.

End point

Children will evaluate which methods of internet communication to use for particular purposes.