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COMPUTING SYSTEMS AND NETWORKS – KS1			
Concept	EYFS	YEAR ONE	YEAR TWO
Content (NC with local adaptations)	Introduction to Technology	Technology around us Recognising technology in school and using it responsibly.	IT around us Identifying technology and how its responsible use improves our world in school and beyond.
Why here?/ Why now?	Prepares children for the KS1 curriculum in recognising technology beyond the classroom.	Following on from EYFS, this unit teaches children that there is lots of useful technology in the world they grow up in.	It builds on the knowledge and uses of technology in the wider world started in EYFS and Year 1.
Declarative (factual) Knowledge Children will know that...	<ul style="list-style-type: none"> - technology can come in many different forms (phones, iPads, laptops, Smartboards, tv etc). -a tablet is a small handheld computer; the large Smartboard is a touch screen; laptops are compact computers; phones are sometimes called mobiles. - technology helps us to do things. 	<ul style="list-style-type: none"> -technology is 'man-made' and not 'natural'. -technology is the name for man-made things that help us in everyday life. -technology is all around us. -digital technology is the name for electronic items that create and store information (computers, iPads, mobile phones, tvs). - the screen (monitor), keyboard, mouse (hand device), power lead, USB ports are the main parts of a computer. -there are important rules to help us use computers safely. -laptops are portable, which means they can be moved to anywhere you want to sit. 	<p>As Year 1 + ...</p> <ul style="list-style-type: none"> -IT stands for information technology. -important IT objects are in our homes and around the world. -IT is made up of computers and things that work with a computer: laptops, games consoles, mobile phones, tablets, SMART boards, digital cameras. -IT is used to control tools and appliances that we use in the home (for heating, setting the washing machine, programming the microwave). -IT helps us to communicate with others (through the internet router, by phone, via a tablet). -IT can entertain us (electronic toys, games consoles and computer games).



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		<ul style="list-style-type: none"> -the screen displays what the computer is doing. - a mouse pad is used to click on or to hold down and drag things around the screen, with the help of a cursor which is shaped as an arrow. - writing on a computer is called 'typing'. - a keyboard enables you to type letters, numbers and symbols onto the screen. - the 'backspace' deletes letters and images. 	<ul style="list-style-type: none"> -IT can be found in the wider world: in shops (barcodes and barcode scanners, card readers), at ATMs using bank cards to draw out money, around the neighbourhood (traffic lights, signals etc). -IT has improved our world by making things quicker and easier: scanning barcodes to quickly add up the cost of shopping; signals help us to avoid traffic so we can cross the road safely; being able to have fun playing electronic games with other people; being able to keep in touch with relatives who do not live with us.
<p>Procedural Knowledge to perform tasks.</p> <p>Children will know how to....</p>	<ul style="list-style-type: none"> - interact with a touch screen to mark make and move objects. - use devices to communicate. -switch a device on and off. 	<ul style="list-style-type: none"> - switch a device on and off. - move the mouse (or tracking pad) to select, click and drag (move) objects. - use a keyboard to type letters, numbers and symbols onto a screen. - delete (remove) font and images. - double click on a file to open it. - save work to a file by using the icon or pressing Ctrl+S. 	<ul style="list-style-type: none"> -use information technology safely and why this is important. -identify information technology in the home and the world around them. -demonstrate or explain how the use of a device helps us to communicate, entertains us or keeps us safe.
<p>Vocabulary</p>	<p>iPad, touch screen, drawing/painting tools, laptop, mobile phone</p>	<p>Technology, help, support, desk, computer mouse/trackpad, keyboard, screen, cursor, click, drag, delete, double click, device, shift, space bar, capital letter, full stop.</p>	<p>Information technology, barcodes, scanners, ATM, chip and pin, game consoles, digital, tablet, laptop, internet, facetime.</p>



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<p>Digital Safety Links and knowledge</p>	<p>Children will know how to...</p> <ul style="list-style-type: none"> - hold a device carefully and use it gently. - ensure food and drink are kept clear to avoid spills. -only use the programs that will keep them safe. -take turns with a partner. -say 'no' to things that make them sad, upset or embarrassed. -recognise that people can be unkind online, and this is not ok. - trust appropriate adults to tell them or show them something they have seen that makes them sad, upset or embarrassed. 	<ul style="list-style-type: none"> - hold a device carefully and use it gently. - ensure drinks are kept clear to avoid spills. -only use the programs that will keep them safe. -take turns with a partner. - log on with a username and password unique to them for security. - understand the meaning of personal information and to keep this safe. - rules for using technology responsibly are there to keep everyone safe at school and at home. 	<ul style="list-style-type: none"> -only access games and apps that are age-appropriate and why. - use a device with care and respect because it is easily breakable. - use technology appropriately and learn that too much screen time can affect sleep and disrupt social times (meal times). - log on with a username and password unique to them for security. - understand the meaning of personal information and to keep this safe. - search safely online. - go to a trusted adult if they see something online that worries, upsets or embarrasses them.
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COMPUTING SYSTEMS AND NETWORKS – KS2				
Concept	YEAR THREE	YEAR FOUR	YEAR FIVE	YEAR SIX
Content (NC with local adaptations)	Connecting computers Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks	The Internet Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.	Systems and Searching Understanding computer systems and how information is transferred between systems and devices.	Communication and collaboration To explore how data is transferred over the internet.
Why here?/ Why now?	To learn more about computers building on prior understanding of KS1 curriculum by learning about other devices that can be used for inputs and outputs.	Builds on knowledge from Y2 on what IT is and Y3 on what networks are. To begin to understand how the WWW is a network before progressing to UKS2 where they learn more about collaborative working via the internet.	Links to Year 4 – what is the internet? To further build on pupils understanding of inputs and outputs and to take part in a collaborative project online	Extends Yr5 unit on collaborative working and further extends understanding of the internet by learning about data packets.
Declarative (factual) Knowledge Children will know that...	-networks connect different devices to one another so that information can be shared. -a router is something that finds a route between networks to connect them.	-the internet is a network of networks that is used and connected to digital devices around the world. -when we use the WWW, routers help us to journey to other	-the WWW was invented by Tim Berners-Lee in 1989. There was only 1 website then, and now there are well over a million! -a search engine is a specific tool for searching on the internet.	-the internet is also a useful communication tool with a variety of modes for a range of purposes. -we can communicate in lots of different ways on the internet.



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	<ul style="list-style-type: none"> -a router is used to connect networks to other networks in different places. -networks have security features (protection) that allows them to block or allow messages or requests. This means information and data can be kept safe. - digital devices accept inputs - digital devices produce outputs - a computer network is made up of multiple devices: Network switch (enables multiple devices on a network to connect with each other), Server (manages the network and stores files, Wireless access point (sends and receives wireless signals for/from devices with Wi-Fi connectivity). -digital devices are used for different activities. 	<p>networks in different parts of the world.</p> <ul style="list-style-type: none"> -the world wide web (WWW) is a system on the internet that has websites and webpages. -websites and webpages can be found using web addresses (domains): www name of organisation/topic type of organisation location. -the content on the internet may belong to different people or companies, e.g., the person who wrote it or the company who published it. -if content has copyright, it means others cannot copy or use it without permission. 	<ul style="list-style-type: none"> -search engines work by returning results which match your key words used in a search. -the best results are at the top of the page and ranked depending on the number and quantity of other web pages that link to them. - Bing, Yahoo, DuckDuckGo, Ask (and others) are popular search engines. -Google Chrome, Internet Explorer are browsers where you can type a search into the address bar. -not everything on the internet is factual and that pages on the internet can be rewritten to show wrong information. -most credible websites will have contact and publication details. 	<ul style="list-style-type: none"> -public communication is visible to all, whilst private communication is restricted to only some people. -some communication is only one-way (YouTube), others are two way (Teams). -data packets are small segments or a larger message. Sometimes an image or file is too big to go from a web server to the user's computer in one piece, so it is broken down into packets of data and then reassembled by the user's computer into the original image. -different search engines will show different results. -a web crawler is a program that searches all websites for content and stores searches in an index, which is then used by search engines. -search engines use algorithms to give a web page a score. The highest score is presented as the highest ranked information. -web designers consider algorithms when making pages. -there are different types of media found on websites.
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<p>Procedural Knowledge to perform tasks.</p> <p>Children will know how to....</p>	<ul style="list-style-type: none"> -follow a process to create inputs and outputs. -recognise similarities and differences between digital devices and non-digital tools. -demonstrate passing information onto other digital devices. 	<ul style="list-style-type: none"> -search for something on the internet using key words. -access the best information. -search the WWW for age-appropriate information they want to see or hear (things to read, music, sounds and videos). -compare the use of different search engines. -use traceroute tools to track the journey between routers. -identify and enter web addresses correctly. 	<ul style="list-style-type: none"> -refine searches to get more precise information. -compare the content of different websites. -identify false websites and evaluate credibility of the information provided on a website. -evaluate the credibility of news found on the website. 	<ul style="list-style-type: none"> -identify features of webpages. -compare the quality of searches ranked in higher and lower positions. -identify and use a range of communication methods (such as emails, messaging, social media, video calling) and explain a purpose for each one. -identify examples of data packets.
<p>Vocabulary</p>	<p>network switch, router, wireless access point, WiFi, connected, digital, device, input, output</p>	<p>Internet, network, router, Website/page/address, browser, content, links, files, download, ownership, permission, information, verify, fake news.</p>	<p>Collaboration input, output, search engine, result, refine, specific, web crawler, ranking, limitations</p>	<p>System, connection, digital, input, process, output, protocol, address, packet, chat, explore, slide, webpage, copyright, copyright free, layout, links, preview, edit, live, hyperlink, page</p>
<p>Digital Safety Links and knowledge</p> <p>Children will know that.../ Children will know how to...</p>	<ul style="list-style-type: none"> -stay safe when using multiple devices. -understand the importance of having a secure password and not sharing it with anyone. 	<ul style="list-style-type: none"> -some content is protected on the internet. -fake news is inaccurate information that has quickly spread as true. We should check multiple sources that we trust to verify information. -report inappropriate online content. 	<ul style="list-style-type: none"> -demonstrate their knowledge of online safety rules. -demonstrate safe and respectful use of a range of different technologies and online services. -be mindful of how actions and words online can impact on others. -report inappropriate content. 	<ul style="list-style-type: none"> -be mindful of how words and actions online can impact on others. -demonstrate online safety rules. -demonstrate safe and respectful use of a range of different online communication tools. -report inappropriate online content. -conduct themselves when using online platforms for communication.



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