Year 1 Computing

E-Safety: ES		Computer Science: CS		Information Technology: IT		Digital Literacy: DL	
Smartie the Penguin, code.org, Kidlo Coding Personal Information, Beebots App, Beebots (Safer Internet Day during Feb) Thinkuknow – Sharing images, Hockney digital art, Strangers online, Busythings Coding		Busythings, J2e – logo, Coding		J2e – J2write, J2paint, J2code Code Monkey, Book Creator, Hockney digital art		Technology world vs. How we communicate	
Key knowledge To know how to seek permission before sharing a photo online. To know to tell a trusted adult about concerns about images which have been shared. To know not everyone is who they say they are online. To know we should not chat with people we don't know online. To know if we are concerned about anything we should tell an adult we trust. To know work can be stored digitally. To know how to keep our personal information safe by not sharing it with people we don't know. To know personal information can include our full name, address, name of our school and phone number. To know personal information is not our favourite colour, a song we like or what we had for lunch.	**Key skills** To be able to use technology safely and respectfully, keeping personal information private. To be able to identify where to go for help and support when they have concerns about content or contact on the internet. To be able to use technology safely and respectfully. To be able to identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. To be able to use technology purposefully to create, organise, store, manipulate and retrieve digital content. To be able to keep personal information private. To be able to identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	**Key knowledge** To know code can make things happen on your computer. To know you must put the code in the right order. To know an algorithm is a list of precise instructions, steps or rules. To know you must put the code in the right order. To know an algorithm is a list of precise instructions, steps or rules.	**Key skills** To begin to understand what algorithms are. To be able to create and debug simple programs. To be able to understand what algorithms are; and that programs execute by following precise and unambiguous instructions; create and debug simple programs.	**Key knowledge** To know how to log in by clicking on name and enter password which has 4 digits. To know how to save work by clicking on the save symbol. To know how to change the font, and the size and colour of text. To know how to highlight the text we wish to change. To know how code can make things happen on your computer. To know that you must put the code in the right order. To know an algorithm is a list of precise instructions, steps or rules. To know an app on an iPad (such as Book Creator) can create an electronic information book. To know digital images and photos can be added to digital books. To know e-books can be enhanced by adding text, images and shapes. Pages should not be too crowded. To know technology is anything made by people to help us. To know technology can be used to create digital artwork.	**Key skills** To be able to use technology purposefully to create, organise, store, manipulate and retrieve digital content. To begin to understand what algorithms are. To be able to create and debug simple programs. To be able to understand what algorithms are; and that programs execute by following precise and unambiguous instructions; create and debug simple programs. To be able to use technology purposefully to create, organise, store, manipulate and retrieve digital content. To be able to use software on a range of digital devices to design and create content that accomplishes a given goal, including presenting information. To be able to use technology purposefully to create, organise, store, manipulate and retrieve digital content.	**Key knowledge** To know that technology is anything made by people to help us. To know the main components of a computer are the screen, keyboard and mouse. To know to tell a trusted adult about concerns. To know the blue button on the mouse is the left click and this is the button we use the most. To know an algorithm is a list of precise instructions, steps or rules.	**Key skills** To be able to recognise common uses of information technology beyond school. To be able to use technology safely and respectfully. To be able to identify where to go for help and support. To be able to name key parts of a computer. To be able to log on. To be able to use a mouse and keyboard.
Enquiry/question/outcome/activity/genre of unit Personal info or not? game. What is personal information? Who can we tell when concerned about content or being contacted? Beebot apps Beebot robot Why do we need to be careful when talking to strangers online? Is everyone who they say they are? How can we tell? Who can we tell when concerned about content or being contacted?		**Enquiry/question/outcome/activity/genre of unit** J2e – log – maze programming.		**Enquiry/question/outcome/activity/genre of unit** Logging into accounts on j2e, saving work and retrieving. Word processing - writing name. Uploading images. Code Monkey Create digital books – Book Creator. Who can we tell when concerned about something you have shared? Who can we tell when concerned about an image of you which has been shared? Produce Hockney inspired digital art using Sketches for Schools app.		**Enquiry/question/outcome/activity/genre of unit** What is technology? What should we do if something goes wrong when using technology? Who can we tell? What is an algorithm?	
Key vocabulary (tier 2) concerned order screen share store stranger tell trusted	**Key vocabulary (tier 3)** internet minimise online technology	**Key vocabulary (tier 2)** code debugging predict retrieve tinkering	**Key vocabulary (tier 3)** code debugging digital instructions order persevering predict technology tinkering	**Key vocabulary (tier 2)** collaborating creating crowded digital	**Key vocabulary (tier 3)** artwork collaborating instructions order persevering personal	**Key vocabulary (tier 2)**	**Key vocabulary (tier 3)**

Year 2 Computing

E-Safety: ES		Computer Science: CS		Information Technology: IT		Digital Literacy: DL	
Term: Being Kind online, Word, Unplugged – Crane Term: Thinkuknow – Gaming (Safer Internet Day during Feb)		Term: Scratch Jr		Term: Book Creator Microsoft Publisher Posters		Term: Search engines	
Key knowledge To know to only send kind messages. Nasty messages should be kept. Tell a trusted adult. To know trusted adults can be our parents, family members and teachers. To know some games are meant for older children and grown-ups. Not everyone is who they say they are online. To know how to keep our personal information safe by not sharing it with people we don't know. To know personal information can include our full name, address, name of our school and phone number. To know personal information is not our favourite colour, a song we like or what we had for lunch. To know to tell a trusted adult about concerns about anything that happens online.	**Key skills** To be able to know who to tell and what to do if you see something upsetting on the internet. To be able to be polite when talking to people, online and offline. To be able to use Microsoft Word to create sentences and learn how to edit sentences (change font, size, colour). To be able to highlight the text you wish to change. To be able to recognise common uses of information technology beyond school. To be able to use technology safely and respectfully, keeping personal information private. To be able to recognise different feelings encountered online. To be able to identify where to go for help and support when they have concerns about content or contact on the internet. To be able to recognise when something 'doesn't feel right'. To be able to identify signs of manipulative behaviour and respond safely to it. To be able to understand the difference between online and offline friendships and the importance of being kind online. To be able to understand the importance of identifying and seeking help from a trusted adult when they need it and how to do this.	**Key knowledge** To know code can make things happen on your computer. To know that in the right order (sequence), code will tell your computer what to do (run). To know each Sprite (character) has its own set of instructions (algorithm) made from blocks of code. To know we start every algorithm with a yellow block. To know blue blocks are for movement. To know an algorithm is a list of instructions, or rules that make something happen. To know we solve many problems every day, such as how to brush our teeth or get dressed.	**Key skills** To be able to follow a set of instructions. To be able to create own animations. To be able to understand what algorithms are; programs execute (run) by following precise and unambiguous instructions; create and debug simple programs; start to use logical reasoning to predict the behaviour of simple programs. To be able to articulate ideas, perseverance, predicting, decomposition, pattern recognition, creativity and communication.	**Key knowledge** To know images can be saved from the internet to the camera roll, can be inserted into digital books. To know to only use images which are labelled for reuse. To know pages should not be too crowded. To know to leave 'white space'. To know books are organised as a sequence of pages. To know Microsoft Publisher can be used to create a poster. To know how to alter text in size and colour. To know text can only be added when a 'text box' is created to place it in. To know how to save work by clicking on the save symbol. Highlight the text we wish to change. We can change the font, the size and colour of text. To know Word processing software (such as Microsoft Word) can be used to create text. To know it is possible to change the font and the size and colour of text.	**Key skills** To be able to create an information book about Japan. To be able to insert pictures, sounds, video and text. To be able to use technology purposefully to create, organise, store, manipulate and retrieve digital content. To be able to use software on a range of digital devices to design and create content that accomplishes a given goal, including presenting information. To be able to use software on a range of digital devices to design and create content that accomplishes a given goal, including presenting information. To be able to use technology purposefully to create, organise, store, manipulate and retrieve digital content. To be able to log on. To be able to create eye-catching posters using Publisher. To be able to add text, changing fonts, size and colours.	**Key knowledge** To understand that there are ways to use children's search engines (Swiggle, Gogglekids, KidRex) to find information safely. To know if something goes wrong, minimise the page and tell a trusted adult. To know how the internet, email, technology works. To know the main components of a computer are the screen, keyboard and mouse.	**Key skills** To be able to use technology safely and respectfully. To be able to identify where to go for help and support when they have concerns about content or contact on the internet. To be able to know how to open a search engine and safe ways of researching. To begin to understand that the internet is a network of computers. To be able to start using simple search engines, using key words.
Enquiry/question/outcome/activity/genre of unit Why is it important to only send nice messages to people? What should we do if we receive a nasty message by text/email/online? Who can we tell when something goes wrong? What information should I share online? How do I know who a trusted adult is?		**Enquiry/question/outcome/activity/genre of unit** Successfully program and run an animation to include a sequence and repetition.		**Enquiry/question/outcome/activity/genre of unit** Using my digital literacy skills, how can I create digital books by importing images and control text? What software skills do I need to control text and import images?		**Enquiry/question/outcome/activity/genre of unit** How can I safely access children's search engine to find information and data?	
Key vocabulary (tier 2) adult feeling messages nasty persevering share tell trusted	**Key vocabulary (tier 3)** content online personal information trusted	**Key vocabulary (tier 2)** algorithm block code debugging instructions left predict repetition right sequence	**Key vocabulary (tier 3)** decomposition sprite tinkering	**Key vocabulary (tier 2)** Background Collaborating creating dark font image light poster size text title	**Key vocabulary (tier 3)** Insert format manipulate text box	**Key vocabulary (tier 2)** adult help information safely technology trusted	**Key vocabulary (tier 3)** internet key words minimise search engine

Year 3 Computing

E-Safety: ES		Computer Science: CS		Information Technology: IT		Digital Literacy: DL	
Term: Thinkuknow – Chatting **Term: Digital trails. Putting a stop to online meanness** **(Safer Internet Day during Feb)**		**Microbits: Introduction(x6)** **https://microbit.org/teach/lessons/first-lessons-with-makecode-and-the-microbit/** **Microbits: Nature Art (x4)** **https://microbit.org/teach/lessons/nature-art-unit-of-work/**		**Term: Blog** **Term: Stop Frame animation** **Teach computing planning**		**Term: Computing systems and networks – Connecting computers** **https://teachcomputing.org/curriculum/key-stage-2/computing-systems-and-networks-connecting-computers** **(Need free login to access)**	
Key knowledge To know there are often times when sharing can be a nice thing to do, such as sharing toys with a brother or sister or sharing school equipment with classmates. However, even though 'sharing' can be good, it is not always a good idea to share a picture – especially if you haven't asked permission first. To know being an 'upstander' is choosing not to join in. To know to ask trusted adults to help if we have a problem online. To know digital footprint is a record of what you do online, including the sites you visit and the things you share. To know permanent is something that lasts forever. To know private information is information about you that can be used to identify who you are, trail a path or track that someone can follow (footprints). To know meanness can be making fun of how someone looks, spreading lies about someone or saying rude things to them. To know not to post comments, photos or videos that may cause embarrassment, and never post comments that may upset people or cause offence.	**Key skills** To be able to identify and approach adults who can help. To be able to use technology safely and respectfully, keeping personal information private and to identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. To be able to identify signs of manipulative behaviour and respond safely to it. To be able to understand the difference between online and offline friendships and the importance of being kind online. To be able to understand the importance of identifying and seeking help from a trusted adult when they need it and how to do this. To be able to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	**Key knowledge** To understand that computers need instructions in a sequence, also known as algorithms, and that these are written as programs in code, a language the computer can understand. To know how sequences and loops (repetition) can be used to make animations and control programs. To know how logic ('if…then' instructions - start of selection) and sensors combine to make a simple control system. To know how to evaluate (and debug) what you have programmed. To understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.	**Key skills** To be able to gain practical skills for creating, testing and transferring code to micro:bits. To be able to gain practical experience and understanding of inputs, outputs, and variables in real-world contexts. To be able to combine skills and knowledge gained through the previous lessons to create computer simulations of real-world games of chance. To be able to use information and communication technology responsibly, competently, confidently and creatively. To be able to analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems. To be able to evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.	**Key knowledge** To know J2e5 can be used to create text and images which we can publish to share with others. To know work can be saved on J2e so that we can retrieve it at a later time. To know to save our work we must click on the save symbol. To know some people enjoy interacting with others on blogs — these are online journals where stories or subjects can be shared with readers over weeks, months or years. To know once you post something online, you can't always take it back. To know digital devices can design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. To know stop motion is a way of creating animations that make it look like still objects are moving. To know stop motion requires using a camera that can take single photos. To know how to take one photo (frame), move the object a little bit, and then take another photo. To know to repeat this step until your object has made all the movements you want it to. To know that every second of the film requires 12 photographs.	**Key skills** To be able to be discerning in evaluating digital content. To be able to select, use and combine a variety of software (including internet services). To be able to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour. To be able to select, use and combine a variety of software (including internet services). To be able to use 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 knowledge** To know the key difference between digital and non-digital devices is that a digital device is capable of some processing, i.e. it has functions beyond being either on or off. To know devices can have one input that leads to several outputs (e.g. starting a video leads to outputs from the screen and the speaker) and that many inputs can lead to one output (e.g. using a mouse and a keyboard to produce a document). To know a school network includes a server, wireless access points, network switch, router and output devices such as a printer or copier.	**Key skills** To be able to sequence, selection, and repetition in programs; work with variables and various forms of input and output. To be able to 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. To be able to 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. To be able to recognise common uses of information technology beyond school.
Enquiry/question/outcome/activity/genre of unit Why is it important to seek permission before sharing images and videos online? What information is OK to have in your digital footprint?		**Enquiry/question/outcome/activity/genre of unit** Where can we see physical computing around us? How can I use logical reasoning to predict the output of programs?		**Enquiry/question/outcome/activity/genre of unit** How can I successfully and safely share ideas on a blog? How can I use a sequence of frames to create a stop-frame animation?		**Enquiry/question/outcome/activity/genre of unit** What are digital devices and how do they connect to devices in a network?	
Key vocabulary (tier 2) adults ask follow help identify information meanness permission rude share track trail trust upset	**Key vocabulary (tier 3)** assumption content identity image online permanent selfie	**Key vocabulary (tier 2)** algorithm debug debugging if…then input output physical computing instructions programmable sequence selection sprite	**Key vocabulary (tier 3)** abstraction control if… then logic loops program repetition selection sensor	**Key vocabulary (tier 2)** animation audience camera frame photo post retrieve save share	**Key vocabulary (tier 3)** background blog blogger digital content foreground online publish storyboard subject	**Key vocabulary (tier 2)** copier device on/off outcome printer switch	**Key vocabulary (tier 3)** data input network output router

Year 4 Computing

E-Safety: ES		Computer Science: CS		Information Technology: IT		Digital Literacy: DL	
Think before you post & This is me **Term: Reliability & Thinkuknow – Sharing photos and videos** **(Safer Internet Day during Feb)**		**Microbits: Electricity (x5)** **https://microbit.org/teach/lessons/electrical-conductors-unit-of-work/** **Term: Kodable & Hour of code**		**Film making**		**Computer systems and networks – the Internet**	
Key knowledge To know not to share a friend's personal information. To know if we are concerned about anything we should tell an adult we trust. To know we must keep our personal information safe and secure by not sharing it with people we don't know. To know personal information can include our full name, address, name of our school, passwords and phone number. To know personal information is not our favourite colour, a song we like or what we had for lunch. To know anyone can make a website and some information online is opinion not fact. To know some websites are trying to sell us things. To know Internet searching is improved by using the correct keywords. To know when we search for information safely online, we use a children's search engine (Swiggle, Gogglekids, KidRex). To know if we see something upsetting we minimise the page and tell an adult we trust.	**Key skills** To be able to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	**Key knowledge** To know how to identify different inputs and outputs. To understand 'selection' when describing the input of a circuit. To know how to show decisions (selection) in algorithms through a flow chart. To understand the value of testing/debugging a program. To know if the sequence, or order of the instructions, given to the computer is wrong, the program won't run correctly. To know sequence is important in a computer algorithm because the correct order of steps is needed for the algorithm to work. To know loops are essential for many of the repetitive tasks commonly required in programming. To know the main purpose of loops is to prevent repetitive code. To know typing out the same code over and over increases programming time and likeliness of bugs.	**Key skills** To be able to write a computer program in order to solve a problem. To be able to analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems. To be able to evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems. To be able to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. To be able to use sequence, selection, and repetition in programs; work with variables and various forms of input and output. To be able to use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	**Key knowledge** To know iMovie allows us to create films on iPads. To know our films must explain what Barnes Primary is doing to be more sustainable. To know a successful film is well planned, with ideas that flow in order (just like a piece of writing). You can add photos or video from your photo library. To know added photos appear for a duration of 3 to 6 seconds. To know you can shorten or extend the duration using the trim handles. To know a Ken Burns effect can the camera appear to sweep across and in on the image. To know if you click on a photo a menu will appear below it which will allow you to add text, filters and you can shorten and lengthen the duration. To know images can be manipulated.	**Key skills** To be able to 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. To be able to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. To be able to identify when images have been manipulated (fake images).	**Key knowledge** To know the World Wide Web is one of many services which are offered over the internet. To know how a network can share messages with another network to form the internet. To know the internet lets us view the World Wide Web. To know the World Wide Web is part of the internet which contains websites and web pages. To know the World Wide Web can be accessed on a variety of devices. To know not everything on the internet is true, honest or accurate.	**Key skills** To be able to 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. To be able to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. To be able to select, use, and combine a variety of software (including internet services) on a range of digital. To be able to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.
Enquiry/question/outcome/activity/genre of unit Why do we need to keep personal information secure online? Know a range of ways to report concerns. How does what I post online affect my identity? How can I recognise the difference between fact and opinion?		**Enquiry/question/outcome/activity/genre of unit** How can I represent selection of inputs using decision boxes?		**Enquiry/question/outcome/activity/genre of unit** How can I edit a successful film using different editing techniques? Trump posting himself Pope.		**Enquiry/question/outcome/activity/genre of unit** What is the internet made of? What is a website? Who owns the internet? Can I believe what I read?	
Key vocabulary (tier 2) adult concern fact favourite opinion share trust	**Key vocabulary (tier 3)** content internet keywords online personal information search engine	**Key vocabulary (tier 2)** algorithm debug input instructions order output sequence selection	**Key vocabulary (tier 3)** coding debugging decision/selection flow chart program	**Key vocabulary (tier 2)** duration length photo sustainable	**Key vocabulary (tier 3)** extend filters Ken Burns library photo trim	**Key vocabulary (tier 2)** accurate honest information message websites	**Key vocabulary (tier 3)** internet network network security router

Year 5 Computing

E-Safety: ES		Computer Science: CS		Information Technology: IT		Digital Literacy: DL	
Term: Personal Information/Cyber bullying Term: Thinkuknow – sharing images, Digital Art. (Safer Internet Day during Feb)		Microbits: Data Handling (x5) https://microbit.org/teach/lessons/data-handling-unit-summary/ Python		Term: Spreadsheets – Microsoft Excel Term: website design		Term: Computing systems and networks — Systems and searching https://teachcomputing.org/curriculum/key-stage-2/computing-systems-and-networks-systems-and-searching	
Key knowledge To know personal information is information about you that cannot be used to identify you, because it is also true for many other people. Private information is information about you that can be used to identify you, because it is unique to you. To know cyberbullying is using digital devices, sites and apps to intimidate, harm and upset someone. To know a digital citizen is anyone who uses technology responsibly to learn, create and participate. To know an upstander is a person who supports and stands up for someone else. To know when someone gives somebody else attention, this can also be positive (for example, saying well done) or negative (for example: making a mean comment, or trying to put pressure or persuade them to do something they might not want to do).	**Key skills** To be able to understand computer networks offer opportunities for communication and collaboration. To be able to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. To be able to identify the reasons why people share information about themselves online. To be able to explain the difference between private and personal information. To be able to explain why it is risky to share private information online. To be able to reflect on the characteristics that make someone an upstanding digital citizen. To be able to recognise what cyberbullying is.	**Key knowledge** To understand that there are different types of data and that it can be grouped. To know some devices (e.g. Microbit) use sensors to collect data. To know data can be used as a condition in selection. To know how to change the value of data. To understand the basics of how digital assistant (AI) selection works. To know Python is one of the most flexible programming languages. To know in Python, a variable is used to store text or numbers. To know variables make it easier for humans to read code. You can use the same variable in lots of places in your code. To know Python can use maths operators to do sums.	**Key skills** To be able to understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation. To be able to analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems. To be able to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. To be able to use sequence, selection, and repetition in programs; work with variables and various forms of input and output. To be able to use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. To start to code using Python for beginners, learning how to use variables, loops, and functions to create visual and interactive artwork, animations, simulations and games.	**Key knowledge** To know everything in a spreadsheet goes into a cell (like a box in a grid). To know each cell is named by the row and column in which it is located. To know cells can be formatted to look clearer or more interesting, similar to word processing. It is possible to change cell colours and borders, font size, style, colour, row height, column width. One advantage of spreadsheets is the ability to do calculations quickly using the SUM function. To know the symbol for multiply is '*' and for divide, we use '/'. It is possible to order data using the sort function. To know templates have different styles and layouts. To know links on the title page allow us to navigate to different pages on our website. To know images can be uploaded from the school server (w-drive). To know by clicking on 'preview' you can see how your website work and to return to editing mode you must click 'Back to Editor'. To know content, userbility and deign are critical for an effective website.	**Key skills** To be able to 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. To be able to enter text and numbers into a spreadsheet. Identify and refer to cells by row and column. To be able to begin to enter formulae with the SUM function To be able to enter formulae into cells. Edit data and discuss the effect on results. Use further functions including AVERAGE, MIN and MAX. Create graphs. To be able to design their own spreadsheet for a specific purpose. To be able to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. To be able to use and combine a variety of software (including internet services) to design and create content that accomplishes given goals, including collecting and presenting information. To be able to create a simple website with content (copyright), effective design and usability.	**Key knowledge** To know computers can be connected together to form systems. To know systems are built using a number of parts. To know computer systems communicate with other devices. To know web searches can find specific information. To know searches do not always return the results that someone is looking for, and refine their searches accordingly. To know performing a web search can influence the results that are returned, and how content creators can optimise their sites for searching. To know how the internet and World Wide Web works (BBC bitesize).	**Key skills** To be able to 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. To be able to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. To be able to consider how larger computer systems work. They see how devices and processes are connected, and reflect on how computer systems can help them. To be able to explain the difference between the World Wide Web and the internet.
Enquiry/question/outcome/activity/genre of unit Is it private information? What is cyber bullying? How can I be an upstander? Complete Test Drive Social Media units – Is it private information? & How to be an Upstander? What is private/personal information and what steps can I take to protect it? Think-u-know sharing images. Hockney digital art – Sketch for school's app.		**Enquiry/question/outcome/activity/genre of unit** What type of data can we discover in our environment and how can we use it to help us make decisions?		**Enquiry/question/outcome/activity/genre of unit** Microsoft Excel – Party Planning unit. How can I organise data and information to create a visual solution? How can I effectively use content, design and usability to create an effective website? Site123 – website design – TYM.		**Enquiry/question/outcome/activity/genre of unit** What are computer systems and networks?	
Key vocabulary (tier 2) account attention comments kind language negative password personal information positive posting	**Key vocabulary (tier 3)** cyber bullying digital citizen upstander	**Key vocabulary (tier 2)** data devices grouped input inputs loops output repetition selection selection	**Key vocabulary (tier 3)** AI digital assistant value of data	**Key vocabulary (tier 2)** borders colour column width content design font size image permission row height save	**Key vocabulary (tier 3)** analysing average cell collecting evaluating function lightbox presenting server sum	**Key vocabulary (tier 2)** components parts search	**Key vocabulary (tier 3)** connection digital input output process system

	private information programming save sharing social media supportive		sensor sequencing variables		sort spreadsheet style usability website	template		

Year 6 Computing

E-Safety: ES		Computer Science: CS		Information Technology: IT		Digital Literacy: DL	
Term: Think before you post **Term: Evaluating digital content** **(Safer Internet Day during Feb)** **Term: Copyright & plagiarism** **Digital footprint**		**MICROBIT: Getting active (x5)** **Term: Control DT models**		**Term: Dangerous Earth spreadsheet**		**Digital footprint**	
Key knowledge To know sharing pictures and videos can be a great way of telling your story but always think before you share. To know if you've taken a picture or video of your friends or family you must get their permission to post it online. To know anything you post online could be there forever. If you're not sure a photo paints a positive picture of you (or your friends!) then think twice before posting. To know not all of the information you find on the internet is true because anybody can write anything they want to online. To know some information online is not reliable so it is important to check information on at least three different websites, in a book or by talking to someone you trust. To know to take care to spell correctly when typing in a search. To know even a small typing error can bring up unwanted results. Viewing some material online is illegal. To know if we see something upsetting, we minimise the page and tell an adult we trust. To know that permission is needed to use others work. To know what AI is and how it works.	**Key skills** To be able to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. To be able to 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. To be able to know if something requires copyright. To be able to know when AI is/is not useful.	**Key knowledge** To know to use variables to describe a character or shape. To know to explain how variables are used in programs. To understand that some devices use sensors. To know to explain how repetition is used when programming sensors. To know that data can be used as a condition in selection. To understand the effects of changing the value of data in programs. To know microbits are easy to use micro-controllers which use scratch-inspired software. To know light dependent resistors (LDRs) are electrical components in which the resistance (block to the flow of electricity) decreases as the light shining on it gets stronger. To know repetition is used in programming to give the same instruction or set of instructions several times. To know repetition uses loops as the means to give these instructions. To know conditions are statements that need to be met for a set of actions to be carried out. To know how conditions can be used in algorithms and programs to control the flow of actions. To know when a condition is met, it is referred to as 'true' and when it is not met, it is referred to as 'false'. To know selection is implemented in programming using if...then... statements. To know selection is used to control the flow of actions in algorithms and programs by checking if a condition has been met.	**Key skills** To be able to analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems. To be able to write algorithms that use variables. To be able to debug programs containing variables. To be able to write algorithms that show how sensors will be used. To be able to read and write algorithms using selection. To be able to identify how digital assistant might work. To be able to write programs that use data as a condition. To be able to write a program to use a micro:bit as a digital assistant. To be able to design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. To be able to use sequence, selection, and repetition in programs; work with variables and various forms of input and output. To be able to use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. To be able to 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 knowledge** To know everything in a spreadsheet goes into a cell (like a box in a grid). Each cell is named by the row and column in which it is located. To know cells can be formatted to look clearer or more interesting, similar to word processing. To know it is possible to change cell colours and borders, font size, style, colour, row height and column width. To know one advantage of spreadsheets is the ability to do calculations quickly using the SUM function. To know the symbol for multiply is '*' and for divide, we use '/'. It is possible to order data using the sort function.	**Key skills** To be able to 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. To be able to enter text and numbers into a spreadsheet. To be able to identify and refer to cells by row and column. To be able to begin to enter formulae with the SUM function. To be able to enter formulae into cells. To be able to edit data and discuss the effect on results. To be able to use further functions including AVERAGE, MIN and MAX. To be able to create graphs. To be able to design their own spreadsheet for a specific purpose.	**Key knowledge** To know the information on social media is permanent. To know once you post a picture, you no longer have ownership.	**Key skills** To be able to learn the impact that social media posts can have on one's digital footprint. To be able to recognise examples of oversharing on social media. To be able to practice creating social media posts that demonstrate care for the digital footprints of the self and others.
Enquiry/question/outcome/activity/genre of unit What digital content can I share safely? What does evaluating digital content mean? How should we respond if we see inappropriate material?		**Enquiry/question/outcome/activity/genre of unit** Use physical computing to explore the concept of selection in programming through the use of physical computing (microbits).		**Enquiry/question/outcome/activity/genre of unit** How can I accurately use software to present my data findings?		**Enquiry/question/outcome/activity/genre of unit**	
Key vocabulary (tier 2) image internet negative online	**Key vocabulary (tier 3)** acceptable illegal permission posting	**Key vocabulary (tier 2)** buzzer commands data device	**Key vocabulary (tier 3)** conditions LED repetition	**Key vocabulary (tier 2)** borders colour column font size	**Key vocabulary (tier 3)** analysing average cell collecting	**Key vocabulary (tier 2)**	**Key vocabulary (tier 3)**

	positive post search engine share true trust website	reliable unacceptable	loops program repetition selection sensor switch variable	selection value of data	height row sort spreadsheet style width	evaluating function presenting SUM		