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| **End point(s)** | **Nursery** | | **Reception** | | **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | | **Year 5** | | **Year 6** |
| **Computer science and programming**  1. To know how to use computational thinking approaches to plan, adapt, write and debug computer programs, using the vocabulary of computer science to explain a program’s features and purpose.  Key vocabulary to be introduced in each year. | **To know the meaning of the terms:** pattern, repeat.  To know that repeat means to do it again.  To know that a pattern is something we can see repeating.  To know how to spot simple patterns. | | **To know the meaning of the terms:** pattern, repeat, rules, instructions.  To know that instructions are a list of things to do in order, to help you make or do something.  To know that rules are things we have to do in a certain way.  To know how to follow a simple set of oral instructions or a set of rules (algorithm).  To know how to sequence simple, familiar tasks. | | **To know the meaning of the terms:** pattern, repeat, rules, instructions, sequence, algorithm, command.  To know that sequence means arranging instructions for algorithms and programs in a particular order.  To know that an algorithm is a set of rules or a precise sequence of instructions for performing a task.  To know that a command is an action or order carried out as a step within a program.  To know how to identify similarities between objects and groups of objects and sort them.  To know how to create and repeat patterns.  To know how to give, follow and write a simple set of instructions and begin to spot errors. | | **To know the meaning of the terms:** pattern, repeat, rules, instructions, sequence, algorithm, program, programming, debugging, tinkering.  To know that programming  is designing and writing programs for a computer.  To know that a program is an algorithm expressed in language that a computer understands (a code).  To know how to follow and give instructions in an accurate sequence.  To know how to predict and describe what an algorithm or simple program will do.  To know how to create an algorithm or simple program and explain its purpose.  To know how to spot patterns and how we can repeat commands in a program (repetition).  To know that debugging means finding and fixing errors in a program or algorithm.  To know how to spot errors in an algorithm or program and fix them (debugging).  To know that tinkering is where you explore, play with, or make changes to a program, to see what happens and find out how it works. | | **To know the meaning of the terms:** pattern, repeat, rules, instructions, sequence, algorithm, program, command, programming, debugging, tinkering, pseudocode, repetition, decomposition.  To know that pseudocode is where an algorithm is planned and written in plain English, rather than a specific computer code or language.  To know that repetition means repeating certain instructions (creating loops) in a program.  To know that decomposition means breaking down a problem, activity or system  into smaller steps or parts..  To know how to create precise, correctly sequenced algorithms and programs.  To know how to use repetition (creating loops) in a sequence of instructions.  To know how to identify and use repetition (loops) in an algorithm and program and explain why it is useful.  To know how identify errors in an algorithm or program and debug the errors by thinking about what should be happening (logical reasoning).  To know how to use decomposition to break a problem into smaller steps before programming and explain why this is useful when programming. | | **To know the meaning of the terms:** pattern, repeat, rules, instructions, sequence, algorithm, program, command, programming, debugging, tinkering, pseudocode, repetition, decomposition, code, coding, logical reasoning.  To know that a code is a language that a computer understands (and there are many different coding languages we can use).  To know that coding is writing an algorithm or program in a specific computer language (a code).    To know that logical reasoning is thinking about what should be happening, to help us predict what comes next, to identify causes and their effects and to detect and fix problems.  To know how to use pseudocode to plan how a program will work and what it should do, before using software to write the program.  To know how to use logical reasoning to explain how algorithms work and predict what they do.  To know how to use logical reasoning to debug an algorithm or program and explain how the problem was solved.  To know how to program and sequence an animation in Scratch. | | **To know the meaning of the terms:** pattern, repeat, rules, instructions, sequence, algorithm, program, command, programming, debugging, tinkering, repetition, decomposition, code, coding, pseudocode, abstraction, procedure.  To know that abstraction means identifying what is important and leaving out unnecessary detail in an algorithm or program.  To know that a procedure (subroutine) is a short sequence of commands, nested within a program, that can be run repeatedly, making the program more efficient.  To know how to use logical reasoning to explain how algorithms and programs work, predict what they do and the effect of changes.  To know how to use logical reasoning, decomposition and abstraction to plan and write algorithms and programs.  To know how to debug an algorithm or program and explain how the problem was solved.  To know how to identify the important information needed for an algorithm or program and want can be left out (abstraction).  To know how to use abstraction to identify and simplify the details needed for a simulation.  To know how to use repetition, procedures or abstraction to make programs more efficient. | | **To know the meaning of the terms:** pattern, repeat, rules, instructions, sequence, algorithm, program, command, programming, debugging, tinkering, repetition, decomposition, code, coding, pseudocode, abstraction, procedure, variable, selection.  To know that a variable is a piece of data with a value that can change, which is stored in memory while a program is running, so that it can be retrieved later.  To know that selection is when a program carries out instructions depending on whether a choice is made or a condition is met (If… then…)  To be able to use the vocabulary of computer science when explaining a program’s purpose/features.  To know how to use logical reasoning to explain how algorithms and programs work, to make predictions and make deliberate changes to create desired effects.  To know how to explain instances of problem-solving and the choices made.  To be able to apply skills such as decomposition, repetition, procedures and abstraction, explaining how they made a program more efficient.  To know how to use variables and selection in an algorithm or program. |
| **End point(s)** | **Nursery** | | **Reception** | | **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | | **Year 5** | | **Year 6** |
| **Computer systems and networks**  2. To know the features of computer systems, including the Internet and World Wide Web, and how they can be used to search for and share data and information privately or publicly.  Key vocabulary to be introduced in each year. | **To know the meaning of the terms:** machine, technology.  To know that a machine is something with moving parts, made by people.  To know that technology includes machines that we use to help us do things.  To know that there is technology all around us that we can use to help us with everyday tasks. | | **To know the meaning of the terms:** machine, technology, electronic, digital device.  To know that electronic means a machine that is powered by electricity and has electrical parts inside.  To know that digital devices are electronic machines such as computers, laptops, tablets, games consoles, smartphones.  To know that we can use digital devices and technology to talk, share and find things out.  To know how to use simple features of technology or digital devices (e.g. pressing buttons, saying commands). | | **To know the meaning of the terms:** machine, technology, electronic, digital device, computer, data.  To know that technology is a machine or object that has been designed to help us do something more easily.  To know that a computer is a digital device that can be given instructions to carry out tasks, calculate and store information.  To know how to locate examples of computers or digital devices at home, in school and in the wider world.  To know how to identify the common parts of a personal computer or digital device and what they are used for  (e.g. hard drive, memory stick, monitor, keyboard, mouse/touchpad, printer, scanner, touchscreen.)  To know that we can talk, share and find things out, using a computer, tablet, phone or games console (going ‘online’).  To know that data is how a computer understands and stores information, facts and numbers in its memory. | | **To know the meaning of the terms:** machine, technology, electronic, digital device, computer, data, online, information, World Wide Web (WWW), website, links, searching, search engine.  To know that information is the useful knowledge or understanding that we can find out from data.  To know that the World Wide Web is a global collection of information and digital media, shared using websites, that can be accessed online.  To know that to be ‘online’ means to access the World Wide Web using a digital device that is connected to it.  To know that when we are online, we are connecting our device to other devices all over the world.  To know that a website is used to share information online and is usually made up of several webpages showing text and digital media.  To know that searching is to look for specific information stored online using key words.  To know that a search engine is a program that searches the WWW for key words, to quickly find the most useful websites.  To know that there are different search engines and that some are more “child-friendly” (e.g. [swiggle.org.uk](http://swiggle.org.uk))  To know how to choose useful or relevant words for a search.  To know that links are website objects that can be clicked to take you to another website. | | **To know the meaning of the terms:** machine, technology, electronic, digital device, computer, online, data, information, World Wide Web (WWW), website, links, searching, search engine, hardware, software, input, processor, output, network.  To know that hardware is any physical part of a computer, device or technology.  To know that software is any digital program that is needed to let us control or use hardware.  To know that a computer comprises components or devices for input, processing and output.  To know that computers accept inputs and produce outputs.  To know that an input is data, actions or commands that are put into a system.  To know that a processor is the part of a computer that decides what to do when an input is received, in order to produce an appropriate output.  To know that an output is data, actions, feedback or physical results that a computer system produces.  To know that a network is a number of devices, connected physically (by wires) or wirelessly (Wi-Fi).  To know how data can be shared between devices on a network and explain why this is useful.  To know how data and information (e.g. emails) are shared across the internet and explain why the network needs protection. | | **To know the meaning of the terms:** machine, technology, electronic, digital device, computer, online, data, information, World Wide Web (WWW), website, links, searching, search engine, hardware, software, input, processor, output, network, web address, address bar, internet, upload, download, server, content, web address, address bar.  To know that the internet is a global network of networks (linked devices) which we use to host and access the WWW.  To explain how the internet allows us to view and access the World Wide Web (WWW).  To know how to explain the difference between the internet and the World Wide Web (WWW).  To know that a server is a computer on a network that is a hub for other devices to connect to; websites, data, programs and services are stored on a server.  To know that every website has a web address which is a unique location on the WWW.  To know that the address bar on a browser allows you to go directly to a website, without searching, by typing in the web address.  To know that upload/download means to transfer data or files to/from a device and a shared space online (such as a server for a website).  To know that content is any data, digital media, programs or services that users create and share online.  To know how to create and upload content to the WWW.  To know that online content is created by people and that there are rules to protect content creators.  To know and explain why we need to think carefully before sharing content online.  To know that not everything shared online is true, honest, accurate or legal. | | **To know the meaning of the terms:** machine, technology, electronic, digital device, computer, online, data, information, World Wide Web (WWW), website, links, searching, search engine, hardware, software, input, processor, output, network, web address, address bar, internet, upload, download, server, content, system, IP address, router, data packet, bots, web crawler, index, results, ranking, protocol, refine, domain name server.  To know that a system has parts (physical, digital, human or processes) that work together to make something happen.  To know how computer systems are used to automate and improve everyday tasks and situations, and to evaluate their advantages and disadvantages.  To know how devices on networks and the internet communicate with each other, using protocols, routers and data packets to direct data quickly and efficiently along many paths of the network.  To know that an IP address is a unique location identifier for a device on a network.  To know that a router is a device that helps to forward and direct data across networks.  To know that a packet is where data is split into smaller parts, that are sent separately across a network and reassembled at the other end, which improves efficiency.  To know that a protocol is an agreed way of doing things (such as a shared language, unique identifiers and turn-taking) for communication between devices.  To know that a domain name server is a device that acts as an ‘address book’ so devices on a network can locate each other.  To know that to refine means to give more specific search terms, in order to narrow the amount of results as much as possible.  To know how to refine a search and compare different search engines’ results.  To know that bots are programs that carry out automated tasks online.  To know that web crawlers are bots that create an index of websites based on key words in the website contents.  To know that an index is a list of websites that contain a specific search term, generated by web crawlers to enable searches.  To know that results are a list of websites produced by a search, and that ranking lists them in order of popularity or relevance (and creators may pay to improve ranking).  To know how search results are ranked and ordered using rules, and that this ranking can be influenced by commercial interests.  To know how to compare working online and offline and explain how the internet enables effective collaboration. | | **To know the meaning of the terms:** machine, technology, electronic, digital device, computer, online, data, information, World Wide Web (WWW), website, links, searching, search engine, hardware, software, input, processor, output, network, web address, address bar, internet, upload, download, server, content, system, IP address, router, data packet, bots, web crawler, index, results, ranking, protocol, refine, domain name server, HTML, hyperlink, copyright-free, fair use.  To know the common features of a web page and the types of media content they can use.  To know how to plan, design, create and evaluate a website, including pages, hyperlinks and media content.  To know that a hyperlink is a link between webpages or files in different locations, usually activated by clicking.  To know that ‘copyright-free’ means that the content can be reused without permission from/payment to the creator.  To know that ‘fair use’ means that small parts of content can be reused for certain purposes only (such as news reporting, teaching or research) without permission from/payment to the creator.  To know how to find copyright-free content, explain ‘fair use’ and how, when and why we need to credit the original creators.  To know that HyperText Markup Language (HTML) is the programming language for creating webpages so that they can be displayed in a web browser.  To know how to use basic HTML tags to create simple web pages. |
| **End point(s)** | | **Nursery** | | **Reception** | | **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | | **Year 5** | **Year 6** |
| **Control of physical systems**  3. To know how to use simulations and control physical systems to test real-world situations and achieve tasks.  Key vocabulary to be introduced in each year. | | To know how to make simple digital devices or toy do things using a touch-screen, buttons or other access device. | | To know the meaning of the term: control.  To know that control means to make a toy or device do what you want it to do.  To know how to purposefully control a digital device or toy using a mouse, touch-screen, buttons or other access device. | | To know the meaning of the terms: control, predict, robot, command.  To know that a robot is an electronic machine that can be given instructions to carry out a task on its own.  To know that a command is an action or order carried out as a step within a program.    To know that to predict is to guess what should happen next, based on what we know.  To know how to purposefully control a floor robot to move to a specific point.  To know how to predict what a program should do, compare it with what actually happens, and begin to spot errors. | | To know the meaning of the terms: control, predict, robot, command, physical, digital.  To know that physical refers to something that exists in real-life and can be sensed or touched (such as a robot or a device).  To know that digital refers to something created on a computer that we can interact with, but which does not exist as a physical object (such as an app, program or file).  To know that a robot cannot think for itself and must be programmed in order to carry out tasks on its own.  To know how to precisely control a robot, writing a program and making predictions about the outcome, and fixing errors in the command sequence. | | To know the meaning of the terms: control, predict, robot, physical, digital, command, pseudocode, Micro:Bit, event, selection.    To know that pseudocode is where an algorithm is planned and written in plain English, rather than a specific computer language.  To know that a Micro:Bit is a microcomputer built into a physical card, that can be programmed using inputs and outputs, or to control other devices.  To know how to use the simple features and functions of a Micro:Bit.  To know that an event is an action or output that is triggered by an input.  To know that selection is when a program carries out instructions depending on whether a choice is made or a condition is met (If… then…)  To know how to use selection to trigger events or create timed sequences of events on a Micro:Bit. | | To know the meaning of the terms: control, predict, robot, physical, digital, command, pseudocode, Micro:Bit, event, selection, monitor, data-logging.  To know that a monitor is a device that can receive input data, such as sound or temperature, and display the data as an output.  To know how to use a program that uses inputs and outputs, using a Micro:Bit as a data logger, e.g. a temperature monitor.  To know that data-logging is collecting data over time.  To know how to use a data-logger (e.g. a Micro:bit) to collect data over time. | | To know the meaning of the terms: control, predict, robot, physical, digital, command, , Micro:Bit, pseudocode, event, selection, monitor, data-logging, remote-control, simulation.  To know that remote-control is where a machine or device is operated from a distance, but cannot act on its own, unlike a robot.  To know how to explain the difference between a remote-controlled device and a robot.  To know that a simulation is a model of a physical system, process or situation, which can be used to safely test how something works or to explore what could happen in real life.  To know how to design and program a simulation using Scratch.  To know how to use a simulation to design, build and test a physical system, e.g. Mars rover.  To know how to evaluate the usefulness and limitations of a simulation.  To know how to design, write and debug a Micro:Bit program to control a robot, e.g. a Bit:Bot buggy. | To know the meaning of the terms: control, predict, robot, physical, digital, command, remote-control, Micro:Bit, pseudocode, event, selection, monitor, data-logging, simulation, Bluetooth.  To know how to program a Micro:Bit to use a range of its features, including inputs and outputs, to solve a problem or suit a particular purpose.  To know that Bluetooth is a short-range, wireless technology that uses radio waves to send data and control signals between paired devices.  To know how to program a Micro:Bit to communicate with other Micro:Bits or devices using a Bluetooth connection. |

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| **End point(s)** | **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **Information technology**  4. Know how to manipulate files, folders and windows, and type quickly and accurately, on a range of formats, apps and devices.  Key vocabulary to be introduced in each year. | To know how to use buttons or a touchscreen on a digital device to make marks, text or pictures appear on a screen. | **To know the meaning of the terms:** type, keyboard, touchscreen.  To know that to type means to write by pressing keys on a computer keyboard.  To know that a keyboard is a device with keys (buttons) for typing letters and numbers.  To know how to type letters and numbers on a tablet or computer keyboard.  To know that a touchscreen is used to control or type on a screen of a digital device. | **To know the meaning of the terms:** type, keyboard, touchscreen, mouse/touchpad, log on/off, app, save, file, text, image, menu, format.  To know how to switch on/off and to log on/off a device or software.  To know that to ‘log on’ means to type in a special name and/or password, so that a device or software can check who is using it.  To know that an app (application) is a computer program that you use for a particular task.    To know that a mouse / touchpad is a device for moving a pointer around and choosing things on a computer screen.  To know how to use a mouse / touchpad / touchscreen on computer or device, to launch and control apps.  To know that a file is a copy of work done on a computer, that is stored in its memory and can be reopened later.  To know that to save means to store a copy of work done on a computer, in its memory.  To know how to save and open work in an app or on a computer.  To know that text is writing on a computer.  To know that an image is a picture on a computer.  To know that a menu is a list of options to choose from on a computer.  To know how to type simple sentences using a keyboard.  To know that format means how text looks.  To know how to use simple text formatting, and choose text formats for effect. | **To know the meaning of the terms:** type, keyboard, touchscreen, mouse/touchpad, log on/off, app, save, file, text, image, menu, format, digital media, folder, cursor, icon, print, printer, windows, browser.    To know that digital media is audio, video, images, text or data documents that are created and stored as files.  To know that a folder is a storage space used to group and organise files saved on a computer.  To know that the cursor is the pointer that shows the current position of the mouse/pad.  To know that icons are small pictures that represent a file, folder or app.  To know that print means to send a computer file to a printer, which makes a copy using ink on paper.  To know that a printer is a device that makes copies of computer files on paper.  To know that windows are boxes that represent folders that are open or apps that are running.  To know how to use the cursor, icons and windows to find/open/close files or folders.  To know how to save work using an appropriate filename and explain why this is useful.  To know that a browser is an app for accessing the WWW and viewing websites.  To know how to navigate the WWW using a browser, including typing in a search, clicking links and using the home, back and forward buttons.  To know how to type complete sentences, with punctuation.  To know how to add images to a document.  To know that format means how text looks or what type of file it is. | **To know the meaning of the terms:** type, keyboard, touchscreen, mouse/touchpad, log on/off, app, save, file, text, image, menu, format, digital media, folder, cursor, icon, print, printer, windows, browser, web address, address bar, word processing, screenshot.    To know how to find, order, open, create, rename and save files and folders.  To know that every website has a web address which is a unique location on the WWW.  To know that the address bar on a browser allows you to go directly to a website, without searching, by typing in the web address.  To know when to use the address bar or a search engine in a browser to navigate the WWW efficiently.  To know that word processing is using typing software (such as Microsoft Word) for writing.    To know how to type sentences quickly and accurately.  To know that a screenshot is a saved image of all or part of what is currently on screen, captured using an app.  To know how to capture screenshots.  To know how to combine text and images in a document and adjust the layout. | **To know the meaning of the terms:** type, keyboard, touchscreen, mouse/touchpad, log on/off, app, save, file, text, image, menu, format, digital media, folder, cursor, icon, print, printer, windows, browser, web address, address bar, word processing, screenshot, taskbar, spellchecker.  To know how to manipulate windows side by side, and to switch between windows and tabs using the taskbar.    To know that the taskbar shows which apps or windows are currently open.  To know that a spellchecker is a program that detects spelling errors and offers suggestions.  To know how to cut / copy / paste or drag/drop files and folders between windows.  To know how to copy and paste a website link into a document.  To know how to type paragraphs quickly and accurately, using a spellchecker to proofread.  To know how to choose style, layout and formatting effects, combining text and images, to suit a purpose. | **To know the meaning of the terms:** type, keyboard, touchscreen, mouse/touchpad, log on/off, app, save, file, text, image, menu, format, digital media, folder, cursor, icon, print, printer, windows, browser, web address, address bar, word processing, screenshot, taskbar, spellchecker, shortcut.  Know how to organise files and folders to enable efficient retrieval.  Know how to choose the apps or document types to best suit a task.  To know that a shortcut is a combination of key presses, used to do something more quickly than by using menus.  Know how to use keyboard shortcuts to edit text.  Know how to combine text, images, layout and formatting make different types of documents for a range of purposes.  Know how to access and use shortcuts, buttons and menus confidently and efficiently. | **To know the meaning of the terms:** type, keyboard, touchscreen, mouse/touchpad, log on/off, app, save, file, text, image, menu, format, digital media, folder, cursor, icon, print, printer, windows, browser, taskbar, web address, address bar, word processing, screenshot taskbar, spellchecker, shortcut, bookmark.  To know that a bookmark is a saved web address.  To know how to use bookmarks so you can return to a website easily.  Know how to type text quickly, confidently and accurately, using both hands, in a range of different apps and types of document.  Know how to choose and apply a range of text formatting and organise text effectively for an audience or purpose, explaining design choices. |

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| **End point(s)** | **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **Information technology**  5. Know how to create a variety of media content to communicate information creatively and effectively to specific audiences.  Key vocabulary to be introduced in each year. | To know how to make a simple digital picture using an app, with help. | **To know the meaning of the terms:** chart.  To know that a chart is a visual way of recording how many or much of something there is.  To know how to collect simple data in a chart.  To know how to take a picture and record a short video using a digital device. | **To know the meaning of the terms:** chart, digital media, digital art.  To know how to take pictures or record a video of work.  To know that it is important to think carefully before sharing a photo or video online.  To know how to collect, record and present data in a simple chart or graph.  To know that digital art is any kind of picture or photo made on a digital device.  To know how to use an app to create digital art.  To know that digital media can be any text, audio, video or images created or viewed using a computer. | **To know the meaning of the terms:** chart, digital media, digital art, blog, post, PowerPoint, presentation, edit.  To know that PowerPoint is an app for creating presentations with text, images and other digital media.  To know that a presentation is a set of slides with text and images, used to explain about a topic.  To know how to create a simple PowerPoint presentation including text and images.  To know how to navigate the WWW using a browser, including typing in a search, clicking links and using the home, back and forward buttons.  To know that there are different search engines and that some are more “child-friendly” (e.g. swiggle.org.uk).  To know how to choose useful or relevant words for a search.  To know how to use a blog (e.g. Seesaw) safely and responsibly to share work and comments.  To know how to take safe pictures of work to be shared on a blog.  To know that we must only upload photos that are safe to share and for which we have permission, explaining why.  To know how to collect, sort and present data or information in a range of charts or graphs.  To know that to edit means to make changes to the original media.  To know how to take effective digital photos and edit images using an app. | **To know the meaning of the terms:** chart, digital media, digital art, blog, post, PowerPoint, presentation, edit, comments, animation.  To know that comments are where someone adds a reply to a person’s earlier post on a blog or social media.  To know how to create blog posts including different media, add appropriate comments and know how to report inappropriate content.  To know how to collect, sort and present data or information in charts/graphs or presentations, using an app.  To know that animation is to create visual movement from still images, practical models or computer models (created either practically or using computer software).  To know how to create stop-frame or computer animation using an app or Scratch. | **To know the meaning of the terms:** chart, digital media, digital art, blog, post, PowerPoint, presentation, edit, comments, animation, retouching.  To know how to combine text, images and animations to communicate information clearly.  To know how to create blog posts including different media and comments, explaining how to report inappropriate content.  Know how to use a range of ways to collect, sort and present data or information in charts/graphs or presentations, using an app.  To know how to collect, retrieve and interpret data using a data logger and use this to find out information.  To know how to use tools and effects to change a digital image, describing the  positive and negative effects of retouching.  To know that retouching means to make small changes that are intended to improve an image but also be hard to detect afterwards.  To know how to recognise images as ‘fake’ or ‘real’. | **To know the meaning of the terms:** chart, digital media, digital art, blog, post, PowerPoint, presentation, edit, comments, animation, retouching, video editing, CAD.  To know how to select and combine digital media to communicate effectively to a specific audience.  To know how to create and evaluate varied blog content and comments, explaining how to report inappropriate content.  Know how to use a range of ways to collect, sort and present data or information, choosing the most appropriate chart/graph and app.  To know that video editing is how videos are created by combining different video, audio and graphics using editing software / apps.  To know how to plan, record, edit and present a video using digital devices and editing software.  To know how to create a simple computer game using Scratch.  To know that CAD (computer-aided design) is using software/apps to design and build 3D models and structures.  To know how to create 3D models using CAD or an app, e.g. Google SketchUp. | **To know the meaning of the terms:** chart, digital media, digital art, blog, post, PowerPoint, presentation, edit, comments, animation, retouching, video editing, CAD, embedded content, database, flat-file database, records, field, value, attributes.  To know how to choose a presentation format or app and select and combine a variety of media to communicate information effectively to a specific audience.  To know how to create a website with hyperlinks, text, images and embedded media.  To know that embedded content means media that is visible within a webpage, not accessed through a link.  Know how to create and evaluate websites and blog content and comments, explaining how to report inappropriate content.  Know how to use a range of ways to collect, sort and present data or information, explaining which method is most appropriate and why.  To know that a database is a collection of organised data that is stored on a computer, which allows people to search and sort large quantities of data to find information.  To know that a flat-file database a collection of data organised in a single table using fields and records.  To know that a record is a set of data about a particular object, formed from one or more fields of data.  To know that a field is one specific piece of data in a database record.  To know that a value is the ‘answer’ to each field within a particular record (e.g. a number, yes/no, a name).  To know that all objects have attributes; in a database, attributes are recorded as a field with a value (e.g. a ‘colour’, which might be ‘red’).  To know how to use a database to collect and retrieve data, create graphs/charts and use these find out information.  Know how to create a more complex computer game or animation using Scratch or Kodu. |

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| **End point(s)** | **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **Digital literacy and e-safety**  6. Know how to build a positive online identity: communicate respectfully, share content safely and lawfully and self-regulate behaviour.  7. Know how to protect yourself online: maintain personal privacy, report abuse, recognise risks and evaluate the quality, accuracy and trustworthiness of online sources of information.  Key vocabulary to be introduced in each year. | **To know the meaning of the terms:** trusted adult.  To know that a trusted adult is someone we know who we can go to for help.  To know who our trusted adults are, why we can trust them. | **To know the meaning of the terms:** trusted adult, private.  To know that we should tell a trusted adult if we are worried about anything.  To know that we can say ‘no’ to things that make us feel worried.  To know that private means something that belongs only to us. | **To know the meaning of the terms:** trusted adult, private, sharing online, personal information, permission.  To know that, when we are ‘online’, everything we read, watch, play with or say may be shared with people all over the world.  To know that anything we share online can be copied by others and stay there forever.  To know that we have personal information about ourselves (e.g. where we live) that we should keep private and only share with people we know and trust.  To know that we should ask a trusted adult if we are not sure whether we should share something online.  To know that we should talk to a trusted adult about any problems or worries about being online.  To know how to safely find things out online, with adult help.  To know that it is important to be considerate, kind and respectful to others when communicating online.  To know how to behave online in ways that do not upset others.  To know that permission means you have asked someone if you can do something involving them or use something of theirs.  To know that any digital work we create belongs to us and should not be shared without our permission. | **To know the meaning of the terms:** trusted adult, private, sharing online, personal information, permission, online identity, fake, account, username, password, cyberbullying.  To know that an online identity is how someone describes or presents themselves online, and that this can be very different to their real-life identity.  To know that ‘fake’ means not real or true and that some people share information online that is not true.  To know how and when to get help from a trusted adult, when given examples of problems about being online.  To know that we can communicate with people we do not know online, so we must always be careful what we say and do.  To know how to keep our personal information private and to explain why this is important.  To know that an account is a personal way to log in to a device, website or app, using a username and password.  To know that a username and password are personal codes used to log in to our online accounts, that stop others using our accounts and which should be kept private.  To know how to respond when private information is shared online mistakenly or without permission.  To know that we should not share other people’s work online without their permission.  To know that cyberbullying is where someone is bullied when they are online or sent bullying messages through a device (e.g. mobile phone).  To know how cyberbullying can happen and explain how and where to get help. | **To know the meaning of the terms:** trusted adult, private, sharing online, personal information, permission, online identity, fake, account, username, password, cyberbullying, profile, legal / illegal, advertising, facts, beliefs, opinions.  To know that a profile is a visible online identity that users set up when they create an account on a device, website or app.  To know that a fake profile is where someone uses false information on their profile to hide their real identity.  To know that anyone can change or hide their identities online.  To know that we must always be careful who we ‘like’, trust or share information with online.  To know how and when to get help from a trusted adult, when given examples of problems about being online.  To know and describe some of the common risks of online activities and suggest ways to stay safe.  To know that copying or sharing someone’s information, work or media online without permission can be illegal.  To know that illegal means against the law and may involve the police.  To know how to avoid sharing private information online mistakenly or without permission, and what to do if this happens.  To know what important rules there are about online behaviour, how to follow them and not commit cyberbullying.  To know that advertising is where a person or business is trying to persuade us to buy or use something.  To know that that advertising online is sometimes mispresented on purpose as important information (e.g. pop-up ‘warning’ messages or news articles).  To know that there is a difference between facts and beliefs or opinions and begin to identify examples of these online.  To know that spending too much time online or using devices can have negative effects on our health and wellbeing. | **To know the meaning of the terms:** trusted adult, private, sharing online, personal information, permission, online identity, fake, account, username, password, cyberbullying, profile, illegal, advertising, facts, beliefs, opinions, tagging, social media, reputation.  To know how our online and real-life identities can differ and describe examples.  To know how to keep personal details private, explaining a range of methods and strategies.  To know that people can steal someone else’s identity online or set up fake profiles to copy others.  To know how to react to problems, both on and offline, giving examples of people or places to whom they can be reported.  To know strategies for safe and fun experiences in a range of online activities.  To know that social media are websites and apps that enable their users to communicate, create and share content through posts and messaging.  To know that tagging means to attach person’s username, to a social media post (e.g. a photo), so that they are linked to it and can be identified from it.  To know how information about ourselves can be found out online, even if we do not intend it to be shared, and can be shared by others (e.g. likes, comments, tags)  To know how social media can encourage or enable online bullying when users are not considerate, kind and respectful.  To know how to identify who owns online content and whether we can share it legally or need to seek permission.  To know that your reputation is people’s opinion of you based on what you do and say, which may be positive or negative,  even if they have not met you.  To know that we must think carefully before sharing content about others that can affect both your and their reputations.  To know how to differentiate between facts, beliefs and opinions online, giving examples of each.  To know that there is a range of methods used to advertise online and how to recognise adverts that are presented as other formats in order to mislead or attract ‘clicks’.  To know how to recognise when we are online or using devices for too long and how to limit this time, describing the impact on our health and wellbeing. | **To know the meaning of the terms:** trusted adult, private, sharing online, personal information, permission, online identity, fake, account, username, password, cyberbullying, profile, illegal, advertising, facts, beliefs, opinions, tagging, social media, reputation, report, block, source, hoax, misinformation, disinformation, opt out, in-app purchase, acceptable / fair use, reliability, online community, collaboration, harmful.  To know how identities online can be copied, changed or hidden and demonstrate responsible choices about our own online identities.  To know how to identify common risks and react to problems sensibly, both on and offline, giving a range of people or places to whom they can be reported.  To know that there are people online who may actively wish us harm and that this is not our fault.  To know how to make positive contributions to an online community.  To know how to evaluate the accuracy of information that is shared online and consider the source and intent.  To know that a source is where information originally came from; some sources are more reliable than others, and some may not even be a true source.  To know that there are hoaxes, misinformation and disinformation online and that we need to evaluate the source before we forward or share content.  To know that: a hoax is something fake presented as real in order to trick someone; misinformation is mistaken or incorrect information shared in the belief that it is true; disinformation is misleading and incorrect information shared deliberately to mislead.  To know how and when to get help for someone that is being bullied online, including how to block users or report abuse and access services, e.g. Childline.  To know how use of technology can affect our sleep as well as physical and mental health and describe strategies to promote healthy usage.  To know that communication online can be public or private, how we can control this using settings, and explain what we should/should not be sharing publicly.  To know how apps and websites collect and use personal information and that they may share it unless we opt out.  To know that to ‘opt out’ means to choose not to agree to something, and that we may need to actively select this option when signing up or from the settings in apps and social media.  To know that in-app purchases are where you can pay for additional content or features in an app or game, and that we must always ask an adult before buying.  To know that ‘acceptable’ or ‘fair use’ means that small parts of content can be reused for certain purposes only (such as news reporting, teaching or research) without permission from/payment to the creator.  To know that reliability is How trustworthy or accurate information might be.  To know when we should or should not share content or media online, describing how and when we may need permission from the content creator.  To know that an online community is a group of people with shared interests who meet or communicate online.  To know that collaboration is working with others to produce or create something.  To know that harmful describes something that will hurt, upset or cause harm to others.  To know that to report is to tell those in charge of an online community about another user who is causing a problem.  To know that to block is to stop another user from being able to contact you, make comments to you or harass you online. | **To know the meaning of the terms:** trusted adult, private, sharing online, personal information, permission, online identity, fake, account, username, password, cyberbullying, profile, illegal, advertising, facts, beliefs, opinions, tagging, social media, reputation, report, block, source, hoax, misinformation, disinformation, opt out, in-app purchase, acceptable / fair use, reliability, online community, collaboration, harmful, gender roles, influencers, followers, age-restrictions, scam, identity theft, phishing.  To know how to identify risks and react to problems sensibly, both on and offline, giving a range of ways to get help or a range of people, places or organisations to whom they can be reported.  To know how rude, bullying or inappropriate comments or activities online create risks for myself and others.  To know that we all build an online reputation through our behaviour and know how to maintain a positive identity online.  To know how to capture evidence of online bullying and identify a range of methods for reporting, concerns.  To know and describe a range of strategies for how to protect the health and wellbeing of myself and others online.  To know strategies to limit the negative effects of overuse of technology and explain the importance of self-regulation of time spent online.  To know that gender roles refers to the (often fixed) ideas that people have about what male or female people should be like, should behave or be allowed to do.  To know that social media can influence our ideas or judgements about gender roles, and how to challenge inappropriate messages.  To know how to discern accurate, quality and trustworthy content and sources of information online.  To know that followers are people who follow a person’s social media profiles so that they see all of that person’s posts and updates.  To know that influencers are people that influence others to emulate their behaviour, likes or choices; they are often very popular figures on social media with many followers.  To know that influencers often work with advertisers to help promote their products and this may not be made clear to their followers.  To know how influencers and advertisers may try to target, manipulate and persuade users online.  To know how to identify, flag and report fake or misleading content.  To know that there are rules and guidance about age-related content and age-restrictions on many apps and social media.  To know that apps and website have privacy and permissions settings that we can choose.  To know that a scam is where someone tries to trick people into giving something away (usually money); identity theft is stealing someone’s online identity, often preventing them from using their own as a result; phishing is where someone tries to trick people into giving out private personal information.  To know how to identify when we are being targeted by scams, identify theft or phishing.  To know how to find copyright-free content and to acknowledge content creators and sources. |