# Computing - Progression of Knowledge 2025-2026

| | EYFS | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| Computing Systems and Networks | To be able to understand what a computer keyboard is and recognising some letters and numbers.<br><br>To know that a mouse can be used to click, drag and create simple drawings.<br><br>To know that to use a computer you need to log in to it and then log out at the end of your session.<br><br>To know that different types of technology can be found at home and in school.<br><br>To know that you can take simple photographs with a camera or iPad.<br><br>To know that you must hold the camera still and ensure the subject is in the shot to take a photo. | To know that "log in and log out" means to begin and end a connection with a computer.<br><br>To know that a computer and mouse can be used to click, drag, fill and select and also add backgrounds, text, layers, shapes and clip art.<br><br>To know that passwords are important for security.<br><br>To know that when we create something on a computer it can be more easily saved and shared than a paper version.<br><br>To know some of the simple graphic design features of a piece of online software. | To know the difference between a desktop and laptop computer.<br><br>To know that people control technology.<br><br>To know that buttons are a form of input that give a computer an instruction about what to do (output).<br><br>To know that computers often work together.<br><br>To know that touch typing is the fastest way to type.<br><br>To know that I can make text a different style, size and colour.<br><br>To know that "copy and paste" is a quick way of duplicating text. | To know what a tablet is and how it is different from a laptop/desktop computer.<br><br>To know the components that make up a network (Wireless access point/WAP, Network switch, Router, Server and devices).<br><br>To know that a server is central to a network and responds to requests made.<br><br>To know that the internet connects all the networks around the world.<br><br>To know that a router connects us to the internet.<br><br>To know what a packet is and why it is important for website data transfer.<br><br>To know the roles that inputs and outputs play on computers.<br><br>To understand that email stands for 'electronic mail.'<br><br>To know that an attachment is an extra file added to an email.<br><br>To understand that emails should contain appropriate and respectful content.<br><br>To know what some of the different components inside | To understand that software can be used collaboratively online to work as a team.<br><br>To know what type of comments and suggestions on a collaborative document can be helpful.<br><br>To know that you can use images, text, transitions and animation in presentation slides. | To know how search engines work.<br><br>To understand that anyone can create a website and therefore we should take steps to check the validity of websites.<br><br>To know that web crawlers are computer programs that crawl through the internet.<br><br>To understand what copyright is.<br><br>To know the difference between ROM and RAM. | To understand the importance of having a secure password and what "brute force hacking" is.<br><br>To know that the first computers were created at Bletchley Park to crack the Enigma code to help the war effort in World War 2.<br><br>To know about some of the historical figures that contributed to technological advances in computing.<br><br>To understand what techniques are required to create a presentation using appropriate software.<br><br>To know that AI is artificial intelligence and is used in everyday life.<br><br>To know that AI is trained on data to recognise patterns and generate outputs.<br><br>To know that AI can be used to generate written content.<br><br>To know that AI can be used to create visual content like pictures.<br><br>To know that AI can help generate basic HTML code to create the structure and layout of a website. |

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| | | | | a computer are e.g. CPU, RAM, hard drive, and how they work together. | | | To know that there are ethical issues surrounding AI, including data privacy, bias and responsible use |
| Programming | To know that being able to follow and give simple instructions is important in computing.<br><br>To understand that it is important for instructions to be in the right order.<br><br>To understand why a set of instructions may have gone wrong.<br><br>To know that you can program a Bee-Bot with some simple commands.<br><br>To understand that debugging means how to fix some simple programming errors.<br><br>To understand that an algorithm is a set of clear and precise instructions. | To understand that an algorithm is when instructions are put in an exact order.<br><br>To know that input devices get information into a computer and that output devices get information out of a computer.<br><br>To understand that decomposition means breaking a problem into manageable chunks and that it is important in computing.<br><br>To know that we call errors in an algorithm 'bugs' and fixing these 'debugging'.<br><br>To understand the basic functions of a Bee-Bot.<br><br>To know that you can use a camera/tablet to make simple videos.<br><br>To know that algorithms move a bee-bot accurately to a chosen destination.<br><br>To know humans need to give robots instructions to follow and that they will carry out these instructions exactly, even if they are wrong.<br><br>To know humans need to give instructions in the | To understand what machine learning is and how that enables computers to make predictions.<br><br>To know that loops in programming are where you set a certain instruction (or instructions) to be repeated multiple times.<br><br>To know that abstraction is the removing of unnecessary detail to help solve a problem.<br><br>To know that coding is writing in a special language so that the computer understands what to do.<br><br>To understand that the character in ScratchJr is controlled by the programming blocks.<br><br>To know that you can write a program to create a musical instrument or tell a joke.<br><br>To know that programming a computer or device involves giving it instructions to perform specific tasks.<br><br>To know that video games, phones, websites and apps are all created using programming. | To know decomposition is the process of breaking down a task or problem into smaller parts.<br><br>To know breaking down a problem into smaller parts makes it easier to solve. | To understand that a variable is a value that can change (depending on conditions) and know that you can create them in Scratch.<br><br>To know what a conditional statement is in programming.<br><br>To understand that variables can help you to create a quiz on Scratch.<br><br>To know that combining computational thinking skills (sequence, abstraction, decomposition etc) can help you to solve a problem.<br><br>To understand that pattern recognition means identifying patterns to help them work out how the code works.<br><br>To understand that algorithms can be used for a number of purposes e.g. animation, games design etc.<br><br>To know 'decomposition' is the process of breaking down a task or problem into smaller parts.<br><br>To know breaking down a problem into smaller parts makes it easier to solve the problem. | To know that a soundtrack is music for a film/video and that one way of composing these is on programming software.<br><br>To understand that using loops can make the process of writing music simpler and more effective.<br><br>To know how to adapt their code while performing their music.<br><br>To know that a Micro:bit is a programmable device.<br><br>To know that Micro:bit uses a block coding language similar to Scratch.<br><br>To understand and recognise coding structures including variables.<br><br>To know what techniques to use to create a program for a specific purpose (including decomposition).<br><br>To know that programmers often save time when creating code by taking code from one program and turning it into another.<br><br>To know that nested loops are loops within loops.<br><br>To know that running a program to identify errors | To know that there are text-based programming languages such as Logo and Python.<br><br>To know that nested loops are loops inside of loops.<br><br>To understand the use of random numbers and remix Python code.<br><br>To know that code may sometimes need to be downloaded onto a physical system/device.<br><br>To know programmers often save time when creating code by taking code from one program and turning it into another.<br><br>To know nested loops are loops within loops.<br><br>To know it is important to follow the syntax rules in a programming language so that the computer understands what we are trying to tell it, but that we do not need to remember all these rules.<br><br>To know many text-based coding languages use brackets or indentation to show which code belongs to a particular function or loop. |

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| | | correct language for the robot to understand.<br><br>To know an algorithm is a set of instructions used to carry out a task.<br><br>To know algorithms must give every step of a task.<br><br>To know algorithms must give clear, sequenced instructions.<br><br>To know there may be an error if a set of instructions (an algorithm) does not give the expected result.<br><br>To know errors could result from sequencing issues, unclear instructions or missing steps. | To know that different devices and programs use different programming languages or 'codes'.<br><br>To know that an algorithm is a set of instructions used to carry out a task.<br><br>To know that an algorithm becomes a program when it is coded.<br><br>To know that programs execute the exact instructions they are given, even if they are incorrect.<br><br>To know that a program is a series of instructions (algorithms) that are written for a computer to follow.<br><br>To know that that a person can program a device by giving it an algorithm/algorithms to follow.<br><br>To know that there must be an error if a program does not execute as expected.<br><br>To know that an error in a computer program is known as 'bug' and fixing errors is known as 'debugging' | | To know 'abstraction' is identifying the important detail and ignoring irrelevant information.<br><br>To know loops are used to save time when writing code by reducing repetition.<br><br>To know a variable is a container or holder for storing information that can change, e.g. numbers or text.<br><br>To know conditional statements tell the computer what to do next based on a user's input.<br><br>To know It is important to identify where the mistake is in the programming as part of the debugging process.<br><br>To know errors in a program could result from sequencing errors, coding errors or missing code. | should be done before checking the code.<br><br>To know that errors in a program could be as a result of forgetting to 'end' a loop.<br><br>To know that typing and spacing are very important in text-based languages and can cause errors in code if used incorrectly.<br><br>To know that code may sometimes need to be downloaded onto a physical system/device.<br><br>To know that devices with sensors (such as pedometers, security systems, thermostats and light sensors) are often programmed to perform specific tasks in reaction to the input from the sensors. | To know typing and spacing are very important in text-based languages and can cause errors in code if used incorrectly.<br><br>To know running a program to identify errors should be done before checking the code.<br><br>To know errors in a program could be as a result of forgetting to 'end' a loop. |

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| Creating Media | | To understand that holding the camera still and considering angles and light are important to take good pictures.<br><br>To know that you can edit, crop and filter photographs.<br><br>To know how to search safely for images online. | To understand that an animation is made up of a sequence of photographs.<br><br>To know that small changes in my frames will create a smoother looking animation.<br><br>To understand what software creates simple animations and some of its features e.g. onion skinning. | To know that different types of camera shots can make my photos or videos look more effective.<br><br>To know that I can edit photos and videos using film editing software.<br><br>To understand that I can add transitions and text to my video. | To know some of the features of web design software.<br><br>To know that a website is a collection of pages that are all connected.<br><br>To know that websites usually have a homepage and subpages as well as clickable links to new pages, called hyperlinks.<br><br>To know that websites should be informative and interactive. | To understand that stop motion animation is an animation filmed one frame at a time using models, and with tiny changes between each photograph.<br><br>To know that decomposition of an idea is important when creating stop-motion animations.<br><br>To know that editing is an important feature of making and improving a stop motion animation. | To know that sound clips can be recorded using sound recording software and that sound clips can be edited and trimmed. |
| Data Handling | To know that sorting objects into various categories can help you locate information.<br><br>To know that using yes/no questions to find an answer is a branching database. To know that a pictogram is a way of showing information. | To know how that charts and pictograms can be created using a computer.<br><br>To understand that a branching database is a way of classifying a group of objects.<br><br>To know that computers understand different types of 'input'. | To understand that you can enter simple data into a spreadsheet.<br><br>To understand what steps you need to take to create an algorithm.<br><br>To know what data to use to answer certain questions.<br><br>To know that computers can be used to monitor supplies. | To know that a database is a collection of data stored in a logical, structured and orderly manner.<br><br>To know that computer databases can be useful for sorting and filtering data.<br><br>To know that different visual representations of data can be made on a computer. | To know that computers can use different forms of input to sense the world around them so that they can record and respond to data. This is called 'sensor data'.<br><br>To know that a weather machine is an automated machine that responds to sensor data.<br><br>To understand that weather forecasters use specific language, expression and pre-prepared scripts to help create weather forecast films. | To know that Mars Rover is a motor vehicle that collects data from space by taking photos and examining samples of rock.<br><br>To know what numbers using binary code look like and be able to identify how messages can be sent in this format.<br><br>To understand that RAM is Random Access Memory and acts as the computer's working memory.<br><br>To know what simple operations can be used to calculate bit patterns. | To know that data contained within barcodes and QR codes can be used by computers.<br><br>To know that infrared waves are a way of transmitting data.<br><br>To know that Radio Frequency Identification (RFID) is a more private way of transmitting data.<br><br>To know that data is often encrypted so that even if it is stolen it is not useful to the thief.<br><br>To know that data can become corrupted within a network but this is less likely to happen if it is sent in 'packets'.<br><br>To know that devices or that are not updated are most vulnerable to hackers. |

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| | | | | | | | To know the difference between mobile data and WiFi. |
| Online Safety | | To know that the internet is many devices connected to one another.<br><br>To know that you should tell a trusted adult if you feel unsafe or worried online.<br><br>To know that people you do not know on the internet (online) are strangers and are not always who they say they are.<br><br>To know that to stay safe online it is important to keep personal information safe.<br><br>To know that 'sharing online means giving something specific to someone else via the internet and 'posting' online means placing information on the internet. | To understand the difference between online and offline.<br><br>To understand what information I should not post online.<br><br>To know what the techniques are for creating a strong password.<br><br>To know that you should ask permission from others before sharing about them online and that they have the right to say 'no.'<br><br>To understand that not everything I see or read online is true. | To know that not everything on the internet is true: people share facts, beliefs and opinions online.<br><br>To understand that the internet can affect your moods and feelings.<br><br>To know that privacy settings limit who can access your important personal information -Information, such as your name, age, gender etc.<br><br>To know what social media is and that age restrictions apply. | To understand some of the methods used to encourage people to buy things online.<br><br>To understand that technology can be designed to act like or impersonate living things.<br><br>To understand that technology can be a distraction and identify when someone might need to limit the amount of time spent using technology.<br><br>To understand what behaviours are appropriate in order to stay safe and be respectful online. | To know different ways that we can communicate online.<br><br>To understand how online information can be used to form judgements.<br><br>To understand some ways to deal with online bullying.<br><br>To know that apps require permission to access private information and that you can alter the permissions.<br><br>To know where I can go for support if I am being bullied online or feel that my health is being affected by time online. | To know that a 'digital footprint' means the information that exists on the internet as a result of a person's online activity.<br><br>To know what steps are required to capture bullying content as evidence.<br><br>To understand that it is important to manage personal passwords effectively.<br><br>To understand what it means to have a positive online reputation.<br><br>To know some common online scams. |