



Computing – Progression of Knowledge and Skills.

EYFS	There are no early learning goals that directly relate to computing objectives, though it is still expected that children will be introduced to appropriate technology and use it within their provision.	
Key Stage 1	Year 1	Year 2
Computer Science - understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions - create and debug simple programs use logical reasoning to predict the behaviour of simple programs	I can explain that an algorithm is a set of instructions. (1.4, 1.5, 1.7) I know that an algorithm written for a computer is called a program. (1.4, 1.7) I can work out what is wrong when the steps are out of order in instructions. (1.4, 1.5) I can say that if something does not work how it should it is because my code is incorrect. (1.7) I can try and fix my code if it isn't working properly. (1.7) I can make good guesses of what is going to happen in a program. For example, where the turtle might go.	I can explain an algorithm is a set of instructions to complete a task. (2.1) I know I need to carefully plan my algorithm so it will work when I make it into code. (2.1) I can design a simple program using 2Code that achieves a purpose. (2.1) I can find and correct some errors in my program. (2.1) I can say what will happen in a program. (2.1) I can spot something in a program that has an action or effect (does something). (2.1)
Information Technology use technology purposefully to create, organise, store, manipulate and retrieve digital content	I can sort sound, pictures and text. (1.2) I can add sound, pictures and text to a program such as 2Create a Story. (1.6) I can change content on a file such as text, sound and images. (1.3, 1.6, 1.7, 1.8) I can name my work. (1.2, 1.3, 1.6, 1.7, 1.8) I can save my work. (1.2, 1.3, 1.6, 1.7, 1.8) I can find my work. (1.2, 1.3, 1.6, 1.7, 1.8)	I can organise data – for example, using a database such as 2Investigate. (2.3, 2.4) I can find data using specific searches – for example, using 2Investigate. (2.4, 2.5) I can use several programs to organise information – for example, using binary trees such as 2Question or spreadsheets such as 2Calculate. (2.4, 2.8) I can edit digital data such as data in music composition software like 2Sequence. (2.7 and most units) I can name, save and find my work. (2.3, 2.4, 2.6, 2.7, 2.8 & most units) I can include photos, text and sound in my creations. (2.8, 2.6)
Digital literacy use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. recognise common uses of information technology beyond school	I can say what technology is. (1.9) I can say what examples of technology are in school. (1.9) I can say what examples of technology are at home. (1.9) I know that a chair uses old technology and a smart phone uses new technology. (1.9) I can keep my login information safe. (1.1 and most units) I can save my work in a safe place such as 'My Work' folder. (1.1 and most units)	I can find information I need using a search engine. (2.5) I know the consequences of not searching online safely. (2.2, 2.5) I can share work and communicate electronically – for example using 2Email or the display boards. (2.2 and others) I can report unkind behaviour and things that upset me online, to a trusted adult. (2.2) I can see where technology is used at school such as in the office or canteen. (2.2) I understand that my creations such as programs in 2Code, need similar skills to the adult world. e.g. The program used for collecting money for school trips.
Lower Key Stage 2	Year 3	Year 4
Computer Science - Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts - Use sequence, selection and repetition in programs; work with	I can make a real-life situation into an algorithm for a program. (3.1) I can design an algorithm carefully, thinking about what I want it to do and how I can turn it into code. (3.1) I can identify an error in my program and fix it. (3.1) I can experiment with timers in my programs. (3.1) I can identify the difference in using the effect of a timer or repeat command in my code. (3.1) I am able to design a program thinking logically about the sequence of steps required. (3.1) I can experiment with the effect of using repeat commands. (3.1)	I can turn a real-life situation to solve into an algorithm, using a design that shows how I can accomplish this in code. (4.1, 4.5) I can use repetition in my code. For example, using a loop that continues until a condition is met such as the correct answer being entered. (4.1) I can use timers within my program designs more accurately to create repetition effects. (4.1) I can use selection (decision) in my programming. For example, using an 'if statement' for a question being asked and the program takes one of two paths. (4.1) I can use variables within my program and know how to change the value of variables. (4.1)



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variables and various forms of input and output • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web • Appreciate how search results are selected and ranked	I can read programs with several steps and predict what it will do. (3.1) I can identify different ways that the internet can be used for communication. (3.5) I can use email such as 2Email to respond to others appropriately and attach files. (3.5)	I can use the user inputs and output features within my program, such as 'Print to screen'. (4.1) I can identify errors in my code by using different methods, such as stepping through lines of code and fixing them. (4.1) I can read programs that contain several steps and predict the outcomes with increasing accuracy. (4.1, 4.5) I recognise the main component parts of hardware which allow computers to join and form a network. (4.8) I understand that network and communication components can be found in many different devices which allow them to join the internet. (4.2, 4.7, 4.8)
Information Technology • Use search technologies effectively 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	I can carry out searches to find digital content on a range of online systems, such as within Purple Mash or on an internet search engine. (Across units) I can collect data and input it into software. (3.3, 3.6, 3.8) I can analyse data using features within software to help such as, formula in 2Calculate (spreadsheets). (3.3, 3.6, 3.8) I can present data and information using different software such as 2Question (branching database) or 2Graph (graphing tool). (3.3, 3.6, 3.8,3.9) I can consider what the most appropriate software to use when given a task by my teacher. (Across units) I can create purposeful (appropriate) content and attach this to emails. (3.3, 3.5, 3.6, 3.7, 3.8, 3.9)	I understand the purpose of a search engine and the main features within it. (4.7) I can look at information on a webpage and make predictions about the accuracy of information contained within it. (4.7) I can create and improve my solutions to a problem based on feedback. For example, create a program using 2Code. (4.1, 4.2) I can review solutions that others have created, using a checklist of criteria. (4.1, 4.2) I can work collaboratively to create content and solutions. (4.1, 4.3, 4.4,48) I can share digital content using a variety of applications such as: 2Blog, 2Email and Display Boards. (Across units)
Digital literacy • Understand the opportunities networks offer for communication and collaboration • Be discerning in evaluating digital content Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	I can create a secure password. (3.2) I can explain the importance of having a secure password and not sharing it with others. (3.2, 3.5) I can explain the negative consequences of not keeping passwords safe and secure. (3.2, 3.5) I understand the importance of keeping safe online and behaving respectfully. (3.2) I can use communication tools such as 2Email respectfully and use good etiquette. (3.2, 3.5) I can report unacceptable content and contact online in more than one way to a trusted adult. (3.2)	I have a good understanding of the online safety rules we learn at school. (4.2 & across curriculum) I can demonstrate how to use different online technologies safely. (4.2 & across curriculum) I can demonstrate how to use a few different online services safely. (4.2 & across curriculum) I know I have a right to privacy both on and offline. (4.2 & across curriculum) I recognise that my wellbeing can be affected by how I use technology. (4.2 & across curriculum) I can report with ease any concerns with content and contact online and know immediate strategies to keep safe. (4.2 & across curriculum)
Upper Key Stage 2	Year 5	Year 6
Computer Science • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use sequence, selection and repetition in programs; work with variables and various forms of input	I can make more complex real-life problems into algorithms for a program. (5.1) I can test and debug my programs as I work. (5.1, 5.5) I can convert (translate) algorithms that contain sequence, selection and repetition into code that works. (5.1) I can use sequence, selection, repetition, and some other coding structures in my code. (5.1) I can organise my code carefully for example, naming variables and using tabs. I know this will help me debug more efficiently. (5.1) I can use logical methods to identify the cause of any bug with support to identify the specific line of code. (5.1) I know the importance of computer networks and how they help solve problems and enhance communication. (5.2) I recognise the main dangers that can be perpetuated via computer	I can turn a complex programming task into an algorithm. (6.1) I can identify the important aspects of a programming task (abstraction). (6.1) I can decompose important aspects of a programming task in a logical way, identifying appropriate coding structures that would work. (6.1) I can test and debug my program as I work on it and use logical methods to identify a cause of a bug. (6.1) I can identify a specific line of code that is causing a problem in my program and attempt a fix. (6.1) I can translate algorithms that include sequence, selection and repetition into code and nest these structures within each other. (6.1) I can use inputs and outputs within my coded programs such as sound, movement and buttons and represent the state of an object (6.1, 6.7) I can interpret (understand) a program in parts and can make logical



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and output • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web • Appreciate how search results are selected and ranked	networks. (5.2) I can explain what personal information is and know strategies for keeping this safe. (5.2) I can use the most appropriate form of online communication according to the digital content. For example, use 2Email, 2Blog and Display Boards. (5.2 & others)	attempts to put the separate parts together in an algorithm to explain the program as a whole. (6.1) I can explain the difference between the internet and the World Wide Web. (6.2, 6.4,6.6) I can explain what a WAN and LAN is and describe the process of how access to the internet in school is possible. (6.2,6.6)
Information Technology • Use search technologies effectively 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	I can search precisely when using a search engine. For example, I know I can add additional words or removes words to help find better results. (5.2) I can explain in detail how accurate, safe and reliable the content is on a webpage. (5.2) I can make appropriate improvements to digital work I have created. (Across units) I can comment on how successful a digital solution is that I have created. For example, a program built in 2Code that sorts decimals numbers. (Across units) I can work collaboratively with others creating solutions to problems using appropriate software such as 2Code. (Across units) I can use collaborative modes such as within 2Connect to work with others and share it. (5.7)	I can use filters when searching for digital content. (6.2,6.9) I can explain in detail how accurate and reliable a webpage and its content is. (6.2) I can compare a range of digital content sources and rate them in terms of content quality and accuracy. (6.1, 6.3, 6.4, 6.5, 6.7,6.9) I can consider the intended audience carefully when I design and make digital content. (6.1, 6.3, 6.4, 6.5, 6.7,6.9) I can design and create my own online blogs. (6.4) I can use criteria to evaluate the quality of my own and others digital solutions, suggesting refinements. (6.1, 6.3, 6.4, 6.5, 6.7,6.9)
Digital literacy • Understand the opportunities networks offer for communication and collaboration Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	I have a secure knowledge of online safety rules taught at school. (5.2 & across units) I can demonstrate the safe and respectful use of different online technologies and online services. (5.2 & across units) I always relate appropriate online behaviour to my right to have personal privacy. (5.2 & across units) I know how to not let my mental wellbeing or others be affected by use of online technologies and services. (5.2 & across units)	I can demonstrate safe and respectful use of a range of different technologies and online services. (6.2, 6.4) I can identify more discrete inappropriate behaviours online. For example, someone who may be trying to groom me or someone else. (6.2) I can use critical thinking to help me stay safe online. (6.2) I know the value of protecting my privacy and others online. (6.2, 6.4)