

National Curriculum

Computing Programs of Study Key Stage 1 and 2



Progression of skills

Progression of Skills: Being a Computer User

A Key Stage 1 Computer User	A Lower Key Stage 2 Computer User	An Upper Key Stage 2 Computer User
<ul style="list-style-type: none"> • Name a range of digital devices • Explain what the basic parts of a computer are used for, e.g. mouse, screen, keyboard • Understand that you can find information from a website • Use a simple password when logging on, where relevant • Understand that you can share digital content • Recognise and use a range of input devices, e.g. mouse, keyboard, microphone, touchscreen • Recognise and use a range of output devices, e.g. printer, speakers, monitor/screen • Recognise that a range of devices contain computers, e.g. washing machine, car, laptop • Know where to save and open work • Understand that you can use a search engine to find information using keyword searches • Understand that all devices, programs, websites, apps and games are designed and manufactured by real people to fulfil specific tasks 	<ul style="list-style-type: none"> • Open and save a file to a suitable folder • Use suitable file names when saving work • Use a search engine to find information using keyword searches • Understand that school computers are connected (if relevant) • Type using all fingers • Understand you can organise files using folders • Delete, move and copy files • Use right-click, left-click and double-click appropriately on a mouse • Use a search engine to find specific information • Know how to copy text and images into a another document • Remember an individual password 	<ul style="list-style-type: none"> • Use the keyboard confidently to type at a suitable pace • Use common keyboard shortcuts • Create and use a strong password where appropriate • Organise files effectively using folders • Use more advanced searching techniques when using a search engine • Understand that different devices can have different operating systems, and can give examples, e.g. Windows, iOS, Android • Understand the main functions of an operating system • Recognise common file types and extensions

Progression of Skills: Being a Digital Communicator

A Key Stage 1 Digital Communicator	A Lower Key Stage 2 Digital Communicator	An Upper Key Stage 2 Digital Communicator
<ul style="list-style-type: none"> • Select media (e.g. images, video, sound) to present information on a topic • Understand that you can edit and change digital content • Select basic options to change the appearance of digital content • Combine media with support to present information, e.g. text and images • Apply edits to digital content to achieve a particular effect • Plan out digital content • Present ideas and information by combining media independently • Talk about what makes digital content good or bad • Edit digital content to improve it 	<ul style="list-style-type: none"> • Edit existing media to make new content with an awareness of copyright • Evaluate existing and their own digital content • Edit digital content to improve it according to feedback • Design and create digital content for a specific purpose • Collaborate with peers using online tools, e.g. blogs, Google Drive, Office 365 • Collect, organise and present information effectively using a range of media • Use a range of tools to edit and enhance media for a particular effect 	<ul style="list-style-type: none"> • Identify and use appropriate hardware and software to fulfil a specific task • Remix and edit a range of existing and their own media to create content • Recognise the audience when designing and creating digital content • Understand the benefits of using technology to collaborate with others • Are aware of a range of Internet services, e.g. email, VOIP (Voice Over Internet Protocol e.g. Skype, FaceTime), World Wide Web, and what they do • Select, combine and use Internet services to fulfil a purpose • Identify success criteria for creating digital content for a given purpose and audience • Evaluate their own content against success criteria and make improvements accordingly

Progression of Skills: Being a Data Handler

A Key Stage 1 Data Handler	A Lower Key Stage 2 Data Handler	An Upper Key Stage 2 Data Handler
<ul style="list-style-type: none"> • Identify an object by asking yes/no questions • Recognise charts, tables or branching databases and understand why we use them • Explain information shown in a simple chart, pictogram, infographic or database • Use specific software to create simple charts • Collect data on a topic (eye colour, pets etc.) • Present data in a pictogram independently • Identify an object using a branching database • Recognise an error in a branching database. • Create a branching database using pre-prepared images and questions • Find out similar information in different formats, e.g. text, video, audio • Explain how different formats communicate information and their benefits • Independently plan out and create a branching database • Evaluate a given branching database and suggest improvements • Understand that the questions you ask are important, when collecting data 	<ul style="list-style-type: none"> • Appreciate that different programs work with different types of data, e.g. text, number • Explore a record database to find out information • Know that there is a difference between data and information • Use filters in a database to find out specific information • Understand the benefits of using a computer to create charts and databases • Understand that information can be stored and shared on the Internet • Understand that search engines store information in databases • Design a questionnaire and collect a range of data on a theme • Enter data into a database package and test • Draw conclusions from information stored in a database, table or chart • Understand that the Internet is made up of computers from all around the world connected together • Understand that that school computers are connected together in a network • Understand that we use a web browser to access information stored on the Internet • Present data in a number of different ways to convey information 	<ul style="list-style-type: none"> • Appreciate that different programs work with different types of data, e.g. text, number • Explore a record database to find out information • Know that there is a difference between data and information • Use filters in a database to find out specific information • Understand the benefits of using a computer to create charts and databases • Understand that information can be stored and shared on the Internet • Understand that search engines store information in databases • Design a questionnaire and collect a range of data on a theme • Enter data into a database package and test • Draw conclusions from information stored in a database, table or chart

Progression of Skills: Being a Programmer and Computational Thinker

A Key Stage 1 Programmer and Computational Thinker	A Lower Key Stage 2 Programmer and Computational Thinker	An Upper Key Stage 2 Programmer and Computational Thinker
<ul style="list-style-type: none"> • Identify and list the steps of a known task in order • Understand that we control computers by giving them instructions • Create a simple program e.g. to control a floor robot • Understand what an algorithm is • Create a simple algorithm • Identify and explain patterns in groups of objects • Debug an error in a simple algorithm or program e.g. for a floor robot • Predict the outcome of a simple algorithm or program • Understand that computers have no intelligence and we have to program them to do things • Understand that the order of instructions in an algorithm is important • Understand that instructions in an algorithm need to be clear and unambiguous • Evaluate the success of an algorithm or program • Identify and correct errors in a given algorithm or program (debugging) • Use the language if... then to describe the relationship between two actions 	<ul style="list-style-type: none"> • Understand that we can decompose a problem into smaller steps to make it simpler • Remix and change an existing program • Use repetition to make programs more efficient • Predict the outcome of a program, e.g. Scratch or Flowol • Use diagrams to represent an algorithm, e.g. a flowchart • Use forever loops in a program • Create a program using a range of events/inputs to control what happens • Use selection in algorithms and programs, i.e. if... then... • Decompose a problem and create a solution (sub-routine) for each step • Use procedures in programs to create a sub-routine e.g. a procedure called 'square' in Logo 	<ul style="list-style-type: none"> • Recognise that different solutions exist for the same problem • Predict what will happen in a program or algorithm (e.g. change of output) when the input changes (e.g. sensor, data or event) • Recognise variables in a program • Use two-way selection, i.e. if... then... else... • Create programs including repeat until loops • Create simple variables, e.g. to keep score or remove lives in a game • Understand the difference between and use if... then... and if... then... else... Statements • Combine a variable with relational operators (< = >) to determine when a program changes, e.g. if score > 5, say "well done" • Can design a physical computing system that uses sensors, e.g. using a flow chart

Progression of Skills: Being a Safe User

A Key Stage 1 Safe User	A Lower Key Stage 2 Safe User	An Upper Key Stage 2 Safe User
<ul style="list-style-type: none"> • Understand that you can share digital content online • Understand what personal information is and the need to keep it private • Know who to tell if concerned about content or contact online • Understand that digital content belongs to the person who first created it • Save and reuse digital content found online • Understand why we use passwords • Can remember a simple password and know not to tell anyone • Understand what makes a good online friend and the need to be kind and thoughtful online as in the real world • Can identify rules to add to an acceptable use policy for the class • Understand that spending a long time in front of a computer screen can be unhealthy • Understand that when we share content online, we might not be able to delete it • Know that not all information found online is true • Understand that the digital content we make belongs to us and others need to ask permission to use it 	<ul style="list-style-type: none"> • Understand that we can search for information in a variety of ways and that we influence the outputs of searches depending on our input • Know different ways of reporting unacceptable content and contact online • Understand when to share personal information and when not to • Understand that games and films have age ratings, and what that means • Understand that people can give permission for others to use their content e.g. using Creative Commons. • Are aware that some people lie about who they are online • Recognise what kind of websites are trustworthy sources of information • Can rate a game or film they have made and explain their rating • Understand the benefits of a good password • Recognise the benefits and risks of different apps and websites • Understand that the media can portray groups of people differently 	<ul style="list-style-type: none"> • Know where to find copyright free images and audio, and why this is important • Demonstrate responsible use of online services and technologies, and know a range of ways to report concerns • Critically evaluate websites for reliability of information and authenticity • Understand what makes a strong password and why this is important at school and in the wider world • Become increasingly savvy online consumers: know that algorithms are used to track online activities with a view to targeting advertising and information • Know that there are laws around the purchase of games; the production, sending and storage of images; what is written online; and around online gambling