

## Curriculum Progression in Computing

	KS1	LKS2	UKS2
<b>Text and Multimedia</b>	Work with others, and with support, to contribute to a digital class resource which includes text, graphic and sound. Save, retrieve and edit their work.	<b>Design and create a webpage, uploading photos and videos.</b> Begin to show an awareness of the intended audience and seek feed-back.	<b>Select, use and combine a variety of software.</b> <b>Use a variety of software, including internet services, on a range of digital devices, to present information.</b>
<b>Digital Images (photos, paint, animation)</b>	<b>Use software to create a simple animation.</b> <b>Use a range of simple tools to manipulate images.</b>	Manipulate digital images using a range of tools in appropriate software to convey a specific mood or idea. <b>Use a range of digital devices to find out about the local area and create maps.</b> <b>Plan, create and edit a detailed animation.</b>	Use images that they have sourced, captured or manipulated as part of a bigger project (e.g. presentation or document).
<b>Sound and music (inc sound recorders)</b>	Chose suitable sounds from a bank to express their ideas. Record short speech. <b>Use a device to create and record digital sounds.</b>	Create a simple podcast, selecting and importing already existing music and sound effects as well as recording their own. <b>Create multiple track compositions that contain a variety of sounds.</b>	Create and share more sophisticated podcasts and consider the effect that their podcasts will have on the audience.
<b>Electronic Communication</b>		Begin to understand the need to abide by school e-safety rules.	Abide by school rules for e-safety. Share ICT work they have done electronically by email or uploading to authorised sites.
<b>Research and E Safety</b>	<b>Explore information from a variety of sources (electronic, paper based etc.)</b> <b>Research a topic using a search engine.</b> <b>Begin to understand how to stay safe on the internet.</b> <b>Use the internet safely and know where to go for help.</b>	Ask their own questions then use ICT sources to find answers, making use of search engines, an index, menu, hyperlinks as appropriate. Make use of copy and paste, beginning to understand the purpose of copyright regulations. Show an understanding that not all information on the internet is accurate. <b>Use technology safely, responsibly and effectively.</b>	Independently and safely search the internet using a variety of techniques to find a range of information and resources on a specific topic. Use appropriate methods to validate information and check for bias and accuracy. Develop a growing awareness of how to stay safe when using the internet (in school and at home) and abide by the school's internet safety policy.
<b>Control (algorithms)</b>	<b>Control a device, on and off screen.</b> <b>Predict the behaviour of simple programs.</b> <b>Know what an algorithm is.</b> <b>Create and debug simple programs.</b>	Engage in problem-solving activities that require them to write procedures etc. and to predict, test and modify. Use control software to control devices (using output commands) or to simulate this on screen. <b>Design, write and debug programs that accomplish specific goals.</b> <b>Design, write and debug effective programs.</b>	Independently create sequences of commands to control devices in response to sensing (i.e. use inputs as well as outputs). <b>Design, write and debug complex programs to create a finished outcome.</b> <b>Use logical reasoning to create, and predict the results of, an algorithm.</b>
<b>Handling information (databases and graphs)</b>	Use a graphing package to collect, organise and classify data, selecting appropriate tools to create a graph and answer questions. <b>Present data using a simple graph.</b>	Use a simple database (the structure of which has been set up for them) to enter, save and interrogate information on a given subject (by searching, sorting, graphing etc). Begin to reflect on how useful the collected data and their interrogation was and whether or not their questions were answered. <b>Use simple formulae to complete a task on Excel.</b>	Understand the need for accuracy and list strategies for spotting implausible data. Be able to talk about issues relating to data protection and the need for data security in the world at large (eg health, police databases). <b>Use formulae on a spreadsheet to investigate mathematical models.</b>

<b>Modelling and simulations</b> (spreadsheets, adventure games and simulations)	<b>Be able to play an adventure game and use a simple simulation, making choices and observing the results.</b> Understand that computers are good at replicating real life events and allowing them to explore contexts that are otherwise not possible.	<b>Use models and simulations to find things out and solve problems.</b> <b>Recognise that simulations are useful in widening experience beyond the classroom.</b> Make simple use of a spreadsheet to store data and produce graphs. <b>Explain how simple algorithms work, using Scratch or robots.</b> Set up and use a spreadsheet model to explore patterns and relationships. Make predictions. Know how to enter simple formulae to assist this process.	Set up and use their own spreadsheet, which contains formulae to investigate mathematical models. Ask "what if ..." questions and change variables in their model. <b>Understand the need for accuracy when creating formulae and check regularly for mistakes, by questioning results.</b> Relate their use of spreadsheets to model situations to the wider world.
<b>Data logging</b> (science and maths)	<b>Record data using a datalogger.</b>	Begin to use a data logger to sense physical data (sound, light, temperature). Interpret the results and use these in their investigations. Realise the advantages of using ICT to collect data that might otherwise be problematic. <b>Record and compare data using a datalogger.</b>	<b>Identify opportunities for data logging and carry out their own experiments.</b> Check and question results and are able to spot trends in data and identify when problems may have occurred. Use a data logger confidently, connected to the computer or remotely, to capture continuous or intermittent data readings. <b>Understand how data is transferred and stored.</b>
<b>Understanding Technologies</b> (individual technologies)	<b>Show an awareness of a range of inputs to a computer (IWB, mouse touch screen, microphone, keyboard, etc).</b> <b>Begin to type on a keyboard.</b> <b>Know that there are different inputs to a computer.</b>	Make choices about the devices and tools they use for specific purposes and explain them in relation to the context. Begin to show an awareness of specific tools used in working life.	Evaluate the tools available to them including any that are unfamiliar or new and use them to solve problems. Demonstrate an awareness of the appropriateness of outcomes depending on choices regarding tools and devices.
<b>Understanding Technologies</b> (networks)	Show an awareness that what they create on a computer or tablet device can be shown to others via another device (e.g. printer, projector, Apple TV). Begin to show an awareness that computers can be linked to share resources.	<b>Know what a password is used for.</b> Show an understanding that their password is the key to accessing a personalised set of resources and files (e.g. My Documents). Show an awareness of where passwords are critical in everyday use (e.g. parents accessing bank details).	Show an understanding of how filtering and monitoring tools affect their use of the school network and Internet and compare this with their experience of access outside school. Show an understanding of the school network and how it links computers to resources in school and beyond. Compare this with other networks they may encounter at home or in the wider world (e.g. banks). <b>Understand and explain computer networks, including the internet, by exploring and explaining different hardware.</b>
<b>Understanding Technologies (the internet)</b>	Use websites and demonstrate an awareness of how to manage their journey around them (e.g. using the back/forward button, hyperlinks).	Show an awareness that not all the resources/tools they use are resident on the device they are using. Begin to show an understanding of URLs. <b>Begin to understand the internet as a computer network.</b> Show an awareness of the need for accuracy in spelling and syntax to search effectively. <b>Use search technologies effectively and understand how results are selected and ranked.</b>	<b>Understand the internet as a computer network.</b> Use collaborative tools and e-mail showing sensitivity for this type of remote collaboration and communication. <b>Use appropriate methods to validate information and check for bias and accuracy.</b> <b>Understand the implications of uploading information to the internet.</b>