PROGRESSION IN COMPUTING

	EYFS	KS1	LKS2	UKS2
COMPUTER SCIENCE	Show resilience and perseverance in the face of a challenge.	Can explain that an algorithm is a set of instructions to solve a problem or achieve an objective. When designing simple programs, show an awareness of the need to be precise with algorithms so that they can be successfully converted into code that the computer can understand. Create a simple program that achieves a specific purpose, and identify and correct some errors. Program designs display a growing awareness of the need for logical, programmable steps. Identify the parts of a program that respond to specific events and initiate specific actions. For example, they can write a cause and effect sentence of what will happen in a program.	Turn a real-life situation into an algorithm by deconstructing it into manageable parts. Debug own programs by identifying an error that prevents it following the desired algorithm and then fix it. Demonstrate the ability to design and code a program that follows a simple sequence. The use of timers to achieve repetition effects are becoming more logical and are integrated into their program designs. Use *if* statements for selection and attempt to combine these with other coding structures. Use and manipulate the value of variables as well as understanding how they can be used to store information. Make use of user inputs and outputs. Program designs shows thought of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures, e.g. *if* statements, repetition and variables. Trace code and use step-through methods to identify errors in code and make logical attempts to correct this. Read programs with several steps and predict the outcome accurately. Understand the ways the internet can be used to provide different methods of communication and the online safety implications associated.	Turn more complex real-life situations into algorithms for a program by identifying the important aspects (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures. Test and debug programs, using logical methods to identify the cause of bugs, demonstrating a systematic approach to identify a specific line of code causing a problem. Translate algorithms that include sequence, selection and repetition into code and own designs show thought of how to accomplish the set task using code. Combine sequence, selection and repetition with other coding structures to achieve their algorithm design, which displays an improving understanding of variables in coding; outputs such as sound and movement; inputs from the user such as button clicks; and the value of functions. Think about code structure in terms of the ability to debug, interpret and explain the program as a whole, e.g. the use of tabs to organise code and the naming of variables. Understand the value of computer networks and aware of the main dangers. Recognise what personal information is and explain how this can be kept safe. Select the most appropriate form of online communications depending on audience and digital content, e.g. blog, email, message boards. Understand and explain the difference between the internet and the World Wide Web. Know what a WAN and LAN are and can describe how to access the internet in school.

INFORMATION TECHNOLOGY	Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Explore, use and refine a variety of artistic effects to express their ideas and feelings.	Demonstrate an ability to organise data, e.g. using a database and can retrieve specific data for conducting simple searches. Edit more complex digital data such as music compositions. Show confidence when creating, naming, saving and retrieving content. Use a range of media in their digital content including photos, text and sound.	Use and understand the functions, features and layout of a search engine, and that this involves connecting to the internet. Appraise selected webpages for credibility and information at a basic level. Collect, analyse, evaluate and present data and information using informed software choices, which can be shared digitally.	Search with greater complexity, including the use of search filters, for digital content when using a search engine. Explain in detail how credible a webpage is and the information it contains, and compare a range of digital content sources to rate them in terms of content quality and accuracy. Make appropriate improvements to digital solutions based on feedback received and can confidently comment on the success of the solution. e.g. creating their own program to meet a design brief. Use several ways of sharing digital content to design and create blogs to become a content creator on the internet. Use criteria to evaluate the quality of digital solutions and identify improvements, making some refinements.
DIGITAL LITERACY AND ONLINE SAFETY	Know and talk about the different factors that support their overall health and wellbeing, including sensible amounts of 'screen time'.	Understand what is meant by technology and identify a variety of examples both in and out of school, making a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair. Effectively retrieve relevant, purposeful digital content using a search engine. Apply learning of effective searching beyond the classroom and share this knowledge. Make links between technology seen around, and coding and multimedia work done in school e.g. animations, interactive code and programs. Understand the importance of keeping information, such as usernames and passwords, private and actively demonstrate this. Know the implications of inappropriate online searches. Take ownership of work produced, and begin to understand how things are shared electronically. Develop an understanding of using email safely and know ways of reporting inappropriate behaviours and content to a trusted adult.	Demonstrate the importance of having a secure password and explain the negative implications of failure to keep passwords safe and secure. Understand the key concepts relating to online safety and know a range of ways of reporting inappropriate content and contact.	Demonstrate the safe and respectful use of a range of different technologies and online services. Identify more discreet inappropriate behaviours through developing critical thinking. Recognise the value in preserving privacy when online for their own and other people's safety.