Progression through Computing

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computing Systems and Networks	**Improving Mouse Skills** Login & navigate around a computer; develop mouse skills; drag, drop, click and control a cursor to create art.	**What is a computer?** Exploring what a computer is by identifying how inputs and outputs work and how computers are used in the wider world to design their own computerized invention. **Word Processing** Word processing and touch typing skills. Introducing keyboard short cuts and simple editing tools.	**Networks and the Internet** Learning what a network is, how devices communicate, how information is shared and identifying components. **Emailing** Sending emails with attachments and learning how to be a responsible digital citizen. Understanding what cyberbullying is. **Journey Inside a Computer** Assuming the role of computer parts and creating paper versions of computers to consolidate understanding of how a computer works.	**Collaborative Learning** Learning how to work collaboratively and exploring a range of collaborative tools including Google Docs, Slides, Forms and Sheets.	**Search Engines** Searching using keywords and phrases, identifying inaccurate information, how pagerank works and how to credit their sources.	**Bletchley Park** Discovering the history of Bletchley and learning about code breaking and password hacking. Demonstrating digital literacy skills by creating presentations.

Programming	**Algorithms Unplugged** Algorithms, decomposition and debugging are made relatable to familiar contexts, following directions, learning why instructions need to be specific. **Programming Bee-Bots** Introducing programming through the use of a Bee-Bot and exploring its functions.	**Algorithms and Debugging** Developing an understanding of; what algorithms are, how to program them and how they can be developed to be more efficient, introduction of loops. **Scratch Jr** Exploring what 'blocks' do by carrying out an informative cycle of predict > test > review. Programming a familiar story and make a musical instrument.	**Scratch** Exploring the programme Scratch, following the predict > test > review cycle. Learning about 'loops' and programming an amination, story and game.	**Further Coding with Scratch** Exploring Scratch further by revisiting its key features and introducing the concept and execution of using 'variables' in code scripts. **Computational Thinking** Solving problems effectively using the four areas of abstraction, algorithm design, decomposition and pattern recognition.	**Programming Music** Building in programming and music skills to create different sounds, beats and melodies which are put to the test with a Battle of the Bands performance! **Micro:bit** Creating algorithms and programs that are used in the real world. Using the 'predict, test and evaluate' cycle to create and debug programs with specific aims.	**Intro to Python** Using the programming language 'Python' to create designs and art. Learning how to create loops and nested loops to make their code more efficient.
Skills Showcase	**Rocket to the Moon** Developing keyboards and mouse skills through designing, building and testing. Creating a digital list of materials, using drawing software and recording data.			**HTML** Learning about the markup language behind a webpage; becoming familiar with HTML tags, changing HTML and CSS code to alter images and 'remix' a live website.	**Mars Rover 2** Exploring how the Mars Rover: moves, follows instructions, collects and sends data; understanding how computers work, what data is and how it is transferred.	**Inventing a product** Designing a product, pupils: evaluate, adapt and debug code to make it suitable for their needs and designing products in CAD and creating a website and video.
Creating Media	**Digital Imagery** Planning a miniature story and capturing it using photography. Editing photos, searching for and adding images to a project.	**Stop Motion** Learning how to create simple animations from storyboarding creative ideas.	**Video Trailers** Developing digital video skills to create trailers, with special effects and transitions.	**Website Design** Developing research, word processing and collaborative working skills whilst learning how webpages and sites are created. Learning to embed media and links.	**Stop Motion Animation** Creating animations, storyboard ideas and decomposing a story into small parts before putting together to create the illusion of a moving image.	**History of Computers** Writing, recording and editing radio plays set during WWII, learning about how computers have evolved from being larger than a room to fitting into the palm of our hand.

Data Handling	**Introduction to Data** Learning what data is and the different ways it can represented. Learning why data is useful and the ways it can be gathered and recorded.	**International Space Station** Learning how data is collected, used and displayed and the scientific learning of the conditions needed for plants and humans, to survive.	**Comparison Cards Database** Learning what a database is and their key components, such as records, fields and data. Further developing the ability to sort and filter data.	**Investigating Weather** Researching and storing data using spreadsheets; designing a weather station that gathers and records data; learning how weather forecasts are made.	**Mars Rover 1** Learning about the Mars Rover, exploring how and why it transfers data including instructions, and how messages can be sent using binary code.	**Big Data 1** Identifying how barcode and QR codes work. Learning how infrared waves are used for the transmission of data while recognising the uses of RFID. **Big Data 2** Further developing understanding of how networks and the internet are able to share information. Learning how big data can be used to design smart buildings.
Online Safety	Learning how to stay safe online and how to manage feelings and emotions when someone or something has upset us.	Learning: how to keep information safe and private online; who we should ask before sharing things online and how to give, or deny permissions online.	Learning: the difference between fact, opinion and belief; and how to deal with upsetting online content. Knowing how to protect personal information online.	Searching for information and making a judgement about the probable accuracy; recognize adverts and pop-ups; understanding that technology can be distracting.	Learning about app permissions; the positive and negative aspects of online communication; that online information is not always factual; how to deal with online bullying and managing our health and well being.	Learning to deal with issues online; about the impact and consequences of sharing information online; how to develop a positive online reputation; combatting and dealing with online bullying and protective passwords.