Computing

Year 1	Computing Systems & Networks **Improving Mouse Skills**	Programming 1 **Algorithms Unplugged**	Skills Showcase **Rocket to the Moon**	Programming 2 **Bee-Bots**	Creating Media **Digital Imagery**	Data Handling **Introduction to Data**
	• To log into a computer and access a website • To develop mouse skills • To use mouse skills to draw and edit shapes • To draw a scene from a story using digital tools • To create a self-portrait using digital techniques	• To understand what an algorithm is. • To follow instructions precisely to carry out an action • To understand that computers and devices use inputs and outputs • To understand and be able to explain that decomposition is. • To know how to debug an algorithm.	• To recognise that digital content can be represented in many forms. • To design a rocket using a graphics editing programme. • To sequence a set of instructions. • To build a rocket. • To test a design and record data.	• To explore a new device. • To create a demonstration video. • To plan and follow a precise set of instructions. • To program a device. • To create a program that tells a story.	• To understand and create a sequence of pictures. • To take clear photos. • To edit photos. • To search for and import images. • To create a photo collage.	• To represent data in different ways. • To use technology to represent data. • To collect and record data. • To sort data • To design an invention to gather data

Year 2	Computing Systems & Networks **What is a computer?**	Programming 1 **Algorithms and debugging**	Computing Systems & Networks 2 **Word Processing**	Programming 2 **Programming: Scratch Jr**	Creating Media **Stop Motion**	Data Handling **International Space Station**
	• To recognise the parts of a computer • To recognise how technology is controlled • To recognise technology • To create a design for an invention • To understand the role of computers	• To decompose a game to predict the algorithms that are used • To understand that computers can use algorithms to make predictions (machine learning) • To plan algorithms that will solve problems • To understand what abstraction is • To understand what debugging is	• To begin to learn to touch type. • To understand how to use a word processor. • To understand how to add images to a text document. • To create a poetry book using sources from the internet. • To create a digital piece of writing	• To explore a new application. • To create an animation. • To use characters as buttons. • To follow an algorithm. • To plan and use code to create an algorithm.	• To understand what animation is. • To understand what stop motion animation is. • To create a stop motion animation. • To plan my stop motion animation. • To create my stop motion animation.	• To understand how computers can help humans survive in space. • To create a digital drawing of essential items for life in space. • To understand the role of sensors on the ISS • To create an algorithm for growing a plant in space • To interpret data

Year 3	Computer Systems & Networks 1 Networks and the Internet	Programming Programming: Scratch	Computing Systems & Networks 2 Emailing	Computing Systems & Networks 3 Journey Inside a Computer	Creating Media Video Trailers	Data Handling Comparison Cards Databases
	• To understand what a network is and understand our school network • To understand how information moves around a network and begin to recognise real world networks • To understand how the Internet works and explain a website's journey • To explore the role of routers • To understand the role of packets	• To explore a programming application • To use repetition (a loop) in a program • To program an animation • To program a story • To program a game	• To understand what a network is and understand our school network • To understand how information moves around a network and begin to recognise real world networks • To understand how the Internet works and explain a website's journey • To explore the role of routers • To understand the role of packets	• To plan a book trailer. • To take photos or videos that tell a story. • To edit a video. • To add text and transitions to a video. • To evaluate video editing.	• To understand the terminology around databases. • To compare paper and computerised databases. • To sort, filter and interpret data • To represent data in different ways • To sort data for a purpose	• To understand the terminology around databases. • To compare paper and computerised databases. • To sort, filter and interpret data • To represent data in different ways • To sort data for a purpose

Year 4	Computing Systems and Networks Collaborative Learning	Programming 1 Further Coding with Scratch	Creating Media Website Design	Skills Showcase HTML	Programming 2 Computational Thinking	Data Handling Investigating Weather
	• To understand that software can be used collaboratively online to work as a team • To understand how to contribute to someone else's work effectively • To understand how to create effective presentations • To understand how to create and share Google Forms • To understand how to use a shared spreadsheet to explore data	• To recall the key features of Scratch • To understand how a Scratch game works by using decomposition to identify key features • To understand what a variable is and how to make one • To understand how to make a variable in Scratch • To use knowledge of how variables work to create a quiz	• To explore the features of Google Sites. • To plan content for a collaborative webpage. • To create a webpage as part of a collaborative class website. • To plan and create a website. • To create and evaluate a website.	• To understand and identify examples of HTML tags. • To change HTML code for a specific purpose. • To change the HTML and CSS to alter the appearance of an object on the web. • To understand and explore complex components of a web page. • To alter key elements on a web page including text and images.	• To understand that computational thinking is made up of four key strands. • To understand what decomposition is and how to apply it to solve problems. • To understand what pattern recognition and abstraction mean. • To understand how to create an algorithm and what it can be used for. • To combine computational thinking skills to solve a problem.	• To log data taken from online sources in a spreadsheet. • To design a weather station. • To design an automated machine to respond to sensor data. • To understand how weather forecasts are made • To use tablets or digital cameras to present a weather forecast

Year 5	Computing Systems and Networking **Search Engines** - To understand what a search engine is and how to use it - To be aware that not everything online is true - To search effectively - To create an informative poster - To understand how search engines work	Programming 1 **Programming Music** - To tinker with Scratch music elements - To create a program that plays themed music - To plan a soundtrack program - To program a soundtrack - To program music for a specific purpose	Data Handling **Mars Rover 1** - To identify how and why data is collected from space. - To read and calculate numbers using binary code. - To identify the computer architecture of the Mars Rovers. - To use simple operations to calculate bit patterns. - To represent binary as text.	Programming 2 **Micro:bit** - To tinker with a new piece of software. - To program an animation. - To recognise coding structures. - To create a program for a specific task. - To create a program.	Creating Media **Stop Motion Animation** - To understand what animation is - To understand what stop motion animation is - To plan my stop motion video, thinking about the characters I want to use - To create a stop motion animation - To edit and assess my stop motion animation	Skills Showcase **Mars Rover 2** - To recognise how bit patterns represent images as pixels. - To explain how the data for digital images can be compressed. - To identify and explain the 'fetch, decode, execute' cycle - To create a safe online profile and tinker with 3D design software - To modify the design of a 3D object using CAD software
Year 6	Computing Systems and Networks **Bletchley Park** - To understand there are many different types of secret codes. - To understand the importance of having a secure password - To understand the importance of Bletchley Park to the World War II war effort - To understand about some of the historical figures that contributed to technological advances in computing - To research and present information about historical figures in computing	Computing Systems and Networks **AI** *Objectives to be added upon release*	Data Handling **Big Data 1** - To identify how barcodes and QR codes work. - To know how infrared waves transmit data. - To recognise how RFID is used. - To input and analyse real-world data. - To analyse and evaluate data.	Programming **Intro To Python** - To tinker with a new piece of software - To understand nested loops - To understand basic Python commands - To use loops when programming - To understand the use of random numbers	Data Handling **Big Data 2** - To explain how data can be safely transferred. - To investigate the data usage of online activities. - To identify how data analysis can improve city life. - To design a system for turning a school into a smart school. - To present ideas for turning a school into a smart school.	Skills Showcase **Inventing a Product** - To design an electronic product. - To code and debug a program. - To create a website - To create and edit a video - To understand the techniques used in advertising a product