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7 Year Subject Overview for Computing

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year Rec	• To know how to operate simple equipment, e.g. turn on CD player and use a remote control. •To begin to complete a simple program on a computer. •To begin to use ICT hardware to interact with age-appropriate computer software.	•To begin to complete a simple program on a computer. •To begin to use ICT hardware to interact with age-appropriate computer software.	• To complete a simple program on a computer. • To use ICT hardware to interact with age-appropriate computer software.	• To complete a simple program on a computer. • To use ICT hardware to interact with age-appropriate computer software.	• To recognise that a range of technology is used in places such as homes and schools. • To select and use technology for particular purposes.	• To recognise that a range of technology is used in places such as homes and schools. • To select and use technology for particular purposes.
Year 1	**Getting Started** • To log in to a computer and access a website. •To develop mouse skills. •To use mouse skills to draw and manipulate shapes. • To use a range of tools to create desired effects. • To understand how to layer shapes to create an image.		**Digital Imagery** •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.	**Introduction to Data** • To represent data in different ways. •To use technology to represent data in different ways. • To collect and record data. • To sort data. • To design an invention to gather data.	**Programming Bee Bot** • To explore a new device. • To create a demonstration video. • To plan and follow a set of instructions precisely. • To program a device. •To create a program.	
Year 2	**What is a computer?** **Inputs/Outputs and uses** • To recognise the parts of a computer • To recognise how technology is controlled • To recognise technology • To create a design for an invention		**Word Processing:** **Touch typing and staying safe online** • To being to learn to touch type • To understand how to use a word processor • To understand how to add images to a text document	**International Space Station:** **Data collection, display and interpretation** • To understand how computers can help humans survive in space • To create a digital drawing of essential items for life in space		**Stop motion:** **Storyboarding and creating simple animations** • To understand what stop motion animation is • To plan my stop motion video, thinking about the characters I want to use

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	• To understand the role of computers		• To create a poetry book using sources from the internet • To understand how to stay safe when talking to people online	• To understand the role of sensors on the ISS • To create an algorithm for growing a plant in space To interpret data		• To create the beginning of my stop motion animation • To create a stop motion animation and include a second character • To watch and discuss our animations and come up with ideas for next steps
Year 3	**Emailing:** **Adding attachments and cyberbullying** • To understand what a network is and create an informative poster. • To recognise the key components of a network. • To understand how information moves around a network. • To recognise networks in the real world.	**Programming:** **Scratch** • To explore a programming application. • To use repetition (a loop) in a program. • To program an animation. • To program a story.		**Journey Inside a Computer:** • To recognise basic inputs and outputs. • To decompose a laptop. • To understand the purpose of computer parts. • To decompose a tablet computer.	**Networks:** **Sharing information and the internet** • To understand what email is used for and to send an email. • To edit email content and add an attachment. • To understand that cyberbullying involves being unkind online. • To understand that not all emails are genuine.	
Year 4		**Investigating Weather:** **Researching and sorting data and green screen video** • To upload data into a spreadsheet • To design a weather station that records data. • To design an automated machine that records data. • To learn how weather forecasts are made. • To use green screen technology.	**HTML:** **Editing the HTML and CSS of a webpage to change the layout of a website and the text images.** • To edit the HTML and CSS of a webpage to change the layout of a website and the text images. • To understand that html is a markup language which defines how a website is displayed.	**Collaborative Learning:** **Google docs, slides, form and sheet** • To learn what collaborative work means and create a set of class rules to ensure that working together runs smoothly. • To learn a little about some of the features of Google Docs that they can use whilst working as part of a team.		**Computational Thinking** **Plugged and unplugged activities to develop the four areas of computational thinking** • 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.

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			•To understand how to edit HTML •To understand how HTML is used to determine the layout of a web page. • To create our own fake stories. •To edit an image and create a story on a web page.	• To learn about some of the features of slide presentation program and how to create fun and interesting presentations. • To be introduced to Google Forms. Learning how to create and share surveys and questionnaires. • To use a shared spreadsheet program to explore spreadsheets and learn how to extract information from data.		• 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.
Year 5		**<u>Online Safety</u>:** **Potential dangers and safety** • To Stay safe online. • To Plan a storyboard for our stop motion online safety. animation and to learn the main features of the stop motion software. • To use stop motion software to create an animation. • To edit our animations. • To evaluate a stop motion animation.	**<u>Micro:bit:</u>** **The meaning and purpose of programming** • 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		**<u>Mars Rover 1:</u>** **Data transfer and binary code** • To identify how and why data is collected from space • To identify how messages can be sent using binary code • 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	**<u>Mars Rover 2:</u>** **3D design Skills** • To understand 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

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Year 6		**Bletchley Park 1:** **Code Breaking and password hacking** • To understand that there are lots of 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	**Big Data 1:** **Barcodes, QR codes and RFID** • To identify how barcodes and QR codes work. • To know how infrared waves transmit data. • To recognise the uses of RFID. • To know how encoding keeps data safe. • To gather and analyse data in real time. • To analyse and evaluate data.	**Big Data 2:** **Data usage and smart schools** • 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.		**Bletchley Park 2:** **WW11 and the first computers** • To tinker with sound. • To record, edit and add sound effects to a radio play. • To understand how computers have changed and the impact this has had on the modern world. • To research one of the computers that changed the world and present information about it to the class. • To design a computer of the future.