Curriculum Overview - Computing

CRADLEY CE PRIMARY SCHOOL	25-26	26-27
Class 1	**Computing systems and networks 1: Using a computer** The main parts of a computer, how to use the keyboard and mouse and logging in and out. **Programming 1: All about instructions** The children learn to receive and give instructions and understand the importance of precise instructions. **Computing systems and networks 2: Exploring hardware** Tinkering and exploring and learning to operate a camera. **Programming 2: Programming Bee-Bots** Children learn about directions, experiment with programming and Bee-bot/Blue-bot and tinker with hardware. **Data handling: Introduction to data** Children sort and categorise data and are introduced to branching databases and pictograms.	**Computing systems and networks 1: Using a computer** The main parts of a computer, how to use the keyboard and mouse and logging in and out. **Programming 1: All about instructions** The children learn to receive and give instructions and understand the importance of precise instructions. **Computing systems and networks 2: Exploring hardware** Tinkering and exploring and learning to operate a camera. **Programming 2: Programming Bee-Bots** Children learn about directions, experiment with programming and Bee-bot/Blue-bot and tinker with hardware. **Data handling: Introduction to data** Children sort and categorise data and are introduced to branching databases and pictograms.
Class 2	**Programming 2: Bee-Bot (Option 1)** Exploring programming by giving clear instructions to a Bee-Bot and explaining how it works. **Creating media: Digital imagery** Developing photography and image editing skills to capture photos to create an adventure story. **Data handling Introduction to data** Learning what data is, why it is useful and the different ways that it can be gathered and recorded both by humans and computers. **Stop motion- Option 1: Using tablets** Creating simple animations, storyboarding creative ideas and decomposing a story into small parts of action. **Data handling: International Space Station**	**Computing systems and networks: Improving mouse skills** Developing mouse skills by learning how to log in and navigate around a computer whole creating digital artwork. **Programming 1: Commands unplugged** Developing and understanding of commands and instructions in programming through unplugged activities. **Skills Showcase: Rocket to the moon** Developing keyboard and mouse skills by designing rockets, creating digital materials lists, using drawing software and recording data. **Programming 1: Algorithms and debugging** Developing an understanding of what algorithms are, how to program them and how they can be developed to me more efficient through a range of unplugged and plugged-in activities.

	Learning how astronauts survive on the ISS, including identifying necessary items, designing sensor displays and exploring habitable planets. **Online safety: Year 2**	**Computing systems and networks 2: Word processing** Exploring word-processing software by using keyboard shortcuts, importing images and applying simple editing tools such as bold, italics, underlining and font colour. **Online safety: Year 1**
Class 3	**Computing systems and networks 1: Networks** Introduction to the concept of networks, learning how devices communicate. From identifying components, learn how information is shared and deepen this understanding by exploring examples of real-world networks. **Data handling: Comparison cards databases** By learning about records, fields and data, the children further explore the concepts of sorting and filtering. **Computing systems and networks 3: Journey inside a computer** Assuming the role of computer parts and creating paper versions of computers helps to consolidate an understanding of how a computer works, as well as identifying similarities and differences between various models. **Microsoft Office 365: Computing systems and networks: Collaborative learning** Using a range of tools to work collaboratively in a responsible and considerate way **Data handling Investigating weather** Researching and storing data using spreadsheets, designing a weather station which gathers and records data and learning how weather forecasts are made. Children use tablets or digital cameras to present a weather forecast. **Online safety: Year 4**	**Microsoft Office 365: Computing systems and networks 2: Emailing** Learning how to send and edit emails, add attachments and how to be a responsible digital citizen by thinking about the contents of what is sent. **Programming: Scratch** Exploring Scratch by programming an animation and improving it through testing and debugging. **Video trailers – Option 2: Using iPads** Developing filming and editing video skills through the storyboarding and creating of trailers. **Microsoft Office 365: Creating media: Website** Developing their research, word processing, and collaborative working skills whilst learning how web pages and web sites are created, exploring how to change layouts, embed images and videos and link between pages. **Computational thinking** Exploring computational thinking through unplugged activities and applying these to programming. **Online safety: Year 3**

Class 4	**Programming 1: Music** Applying programming skills to create a soundtrack for a particular genre. **Stop-motion animation; Option 1: Stop Motion Studio** Storyboarding ideas, taking photographs and editing to create a video animation. **Computer systems and networks: Search** engines Understanding how search engines work and developing searching skills to find relevant and accurate information online. **Data handling 1: Big Data 1** Understanding the use of big data including barcodes, QR codes, infrared and RFID technologies. **Programming: Intro to Python** Learning the fundamentals of the programming language of Python, they will test, change and explain what their program does. Children use loops and explain what repeats d and what the parts of the loop do while recognizing that computers choose random numbers and decompose the program into an algorithm. **Online Safety: Year 6**	**Programming 2: BBC micro:bit** Exploring how to program the BBC micro:bit, creating interactive projects with sensors, variables and conditional statements. **Data handling: Mars Rover 1** Identifying how the Mars Rover collects different types of data and transmits this back to Earth using binary code. **Skills showcase: Mars Rover 2** Learning about pixels and binary, creating a pixel picture and saving a JPEG as a bitmap to understand the transfer of image data. Children will learn about the 'fetch, decode, execute' cycle and its real-world applications while beginning to use 3D design tools. **Computing systems and networks: Exploring AI** Exploring what AI is and how it generates text, images and code, as well as learning about creating and refining prompts to improve AI responses while also considering the ethical implications of AI and its potential to replace human roles. **Skills showcase: Inventing a product** Designing a new electronic product and using CAD software to design appropriate housing for it. Developing skills in website design, video editing, and persuasive language to promote their product. Evaluating and adapting existing code, debugging programs, and searching for accurate information online. **Online safety: Year 5**	