Essendon C of E (VC) Primary School

Long-term plan: Computing Mixed Age by Kapow Scheme

Cycle A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	Online safety
Year 1/2	Computing systems and networks: Improving mouse skills	Programming 1: Commands unplugged	Skills showcase: Rocket to the moon	Computing systems and networks 1: What is a computer?	Programming 1: Algorithms and debugging	Computing systems and networks 2: Word processing	Online safety: Year 1
Year 3/4	Microsoft Office 365: Computing systems and networks 2: Emailing	Programming: Scratch	Video trailers – Option 1: Using devices other than iPads	Google: Creating media: Website design	Programming 1: Further coding with Scratch	Programming 2: Computational thinking	Online safety: Year 3
Year 5/6	Programming 2: BBC micro:bit	Data handling: Mars Rover 1	Skills showcase: Mars Rover 2	Computing systems and networks: Bletchley Park and the history of computers	Computing systems and networks: Exploring AI	Skills showcase: Inventing a product	Online safety: Year 5

Cycle B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	Online safety
Year 1/2	Programming 2: Bee-Bots	Creating media: Digital imagery	Data handling: Introduction to data	Option 1: Programming 2: MakeCode	Creating media: Stop motion: Using tablets	Data handling: International Space Station	Online safety: Year 2
Year 3/4	Computing systems and networks 1: Networks	Data handling: Comparison cards databases	Computing systems and networks 3: Journey inside a computer	Google: Computing systems and networks: Collaborative learning	Data handling: Investigating weather	Skills showcase: HTML	Online safety: Year 4
Year 5/6	Programming 1: Music	Stop-motion animation – Option 1: Stop Motion Studio	Computing systems and networks: Search engines	Data handling 1: Big Data 1	Data handling 2: Big Data 2	Programming: Exploring Python	Online safety: Year 6

Cycle A Year 1/2

Unit 1	Computing systems and networks: Improving mouse skills 6 lessons Knowing how to log in and navigate around a computer, developing mouse skills, learning how to drag, drop, click and control a cursor to create works of art inspired by Kandinsky and self-portraits.	**Unit 2**	Programming 1: Commands unplugged 6 lessons Exploring commands and instructions through a range of unplugged games and activities, the children develop an understanding of key programming vocabulary.
Unit 3	Skills showcase: Rocket to the moon 6 lessons Developing keyboard and mouse skills by designing rockets, creating digital materials lists, using drawing software and recording data.	**Unit 4**	Computing systems and networks 1: What is a computer? 6 lessons Exploring what a computer is by identifying and learning how inputs and outputs work. Understanding how computers are used in the wider world, children design their own computerised invention.
Unit 5	Programming 1: Algorithms and debugging 6 lessons Developing an understanding of what algorithms are, how to program them and how they can be developed to be more efficient through a range of unplugged and plugged-in activities.	**Unit 6**	Computing systems and networks 2: Word processing 6 lessons Learning about word processing, the children develop touch typing skills, explore how to stay safe online, use important keyboard shortcuts, import images into their documents and apply simple editing tools such as bold, italics, underlining and font colour.
Unit 7	Online safety: Year 1 6 lessons Learning about online safety, including using useful tips to stay safe when online; how to manage feelings and emotions when someone or something has upset us online; learning about the responsibility we have as online users; exploring the idea of a ‘digital footprint’.		

Year 3/4

Unit 1	Microsoft Office 365: Computing systems and networks 2: Emailing 6 lessons Children learn how to send emails with attachments and discover how to be a responsible digital citizen by thinking about the contents of what is sent. This unit is compatible with Microsoft devices.	**Unit 2**	Programming: Scratch 6 lessons Exploring Scratch by programming an animation, the children learn key coding concepts, test and debug their work and develop their ability to improve digital projects through evaluation.
Unit 3	Video trailers – Option 1: Using devices other than iPads 6 lessons Creating book trailers	**Unit 4**	Google: Creating media: Website design 6 lessons Website creation and Google Sites.
Unit 5	Programming 1: Further coding with Scratch 6 lessons Programming a game, the children use variables, sensors and if statements, debug their projects and evaluate their designs to improve functionality.	**Unit 6**	Programming 2: Computational thinking 0 lessons Developing the four areas of computational thinking through a range of plugged and unplugged activities.
Unit 7	Online safety: Year 3 6 lessons Learning about online safety: 'fake news', privacy settings, ways to deal with upsetting online content, protecting our personal information on social media.		

Year 5/6

Unit 1	Programming 2: BBC micro:bit 6 lessons Exploring how to program the BBC micro:bit, the children create interactive projects using sensors, experiment with variables, apply conditional statements and develop an understanding of how coding brings digital devices to life.	**Unit 2**	Data handling: Mars Rover 1 6 lessons Identifying how the Mars Rover collects different types of data and transmits this back to Earth using binary code.
Unit 3	Skills showcase: Mars Rover 2 6 lessons 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.	**Unit 4**	Computing systems and networks: Bletchley Park and the history of computers 6 lessons Exploring code-breaking at Bletchley Park, historical figures in computing, the evolution of computers, designing a computer of the future and creating an audio advert, this unit combines lessons from archived content while retaining the progression and skills previously covered in two separate units.
Unit 5	Computing systems and networks: Exploring AI 6 lessons 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.	**Unit 6**	Skills showcase: Inventing a product 6 lessons 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.
Unit 7	Online safety: Year 5 6 lessons Learning about potential online dangers and safety.		

Cycle B

Year 1/2

Unit 1	Programming 2: Bee-Bots 6 lessons Exploring commands, instructions and errors, the children program a Bee-Bot, practise debugging and begin thinking logically about sequencing.	**Unit 2**	Creating media: Digital imagery 8 lessons Using creativity and imagination to plan a miniature adventure story and capture it using developing photography skills. Learn to enhance photos using a range of editing tools as well as searching for and adding other images to a project, resulting in a high-quality photo collage showcase.
Unit 3	Data handling: Introduction to data 6 lessons Learning what data is and the different ways that it can be represented as well as developing an understanding of why data is useful, how it can be used and ways in which it can be gathered and recorded both by humans and computers.	**Unit 4**	Option 1: Programming 2: MakeCode 6 lessons Using 'MakeCode' to explore what blocks do, planning and building a program.
Unit 5	Creating media: Stop motion: Using tablets 6 lessons Creating simple animations, storyboarding creative ideas and decomposing a story into small parts of action.	**Unit 6**	Data handling: International Space Station 6 lessons Learning how astronauts survive on the ISS, including identifying necessary items, designing sensor displays and exploring habitable planets. Children gain an understanding of living in space and how space exploration can benefit life on Earth.
Unit 7	Online safety: Year 2 5 lessons Learning about online safety, including: what happens to information posted online; how to keep things private online; who we should ask before sharing online; describing different ways to ask for, give, or deny permission online.		

Year 3/4

Unit 1	Computing systems and networks 1: Networks 6 lessons 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	**Unit 2**	Data handling: Comparison cards databases 8 lessons By learning about records, fields and data, the children further explore the concepts of sorting and filtering.
Unit 3	Computing systems and networks 3: Journey inside a computer 6 lessons 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.	**Unit 4**	Google: Computing systems and networks: Collaborative learning 6 lessons Google Docs, Slides, Form and Sheet
Unit 5	Data handling: Investigating weather 6 lessons 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.	**Unit 6**	Skills showcase: HTML 6 lessons Editing the HTML of a web page to change the layout of a website and the text and images.
Unit 7	Online safety: Year 4 6 lessons Learning how to navigate the internet in an informed, safe and respectful way.		

Year 5/6

Unit 1	Programming 1: Music 0 lessons	**Unit 2**	Stop-motion animation – Option 1: Stop Motion Studio 6 lessons Pupils learn how to create animations using Stop Motion Studio.
Unit 3	Computing systems and networks: Search engines 6 lessons Understanding how search engines work and developing searching skills to find relevant and accurate information online.	**Unit 4**	Data handling 1: Big Data 1 6 lessons Understanding about the use of big data including barcodes, QR codes, infrared, and RFID technologies. Children will create and scan their own QR codes, manipulate real-time data in spreadsheets, and present their findings. They also analyse transport data to understand its usefulness to commuters.
Unit 5	Data handling 2: Big Data 2 6 lessons Understanding data usage through the use of mobile data vs wi-fi, the Internet of Things, and big data. Identifying high/low data activities and preparing presentations on using Big Data/IoT to improve school efficiency while respecting privacy.	**Unit 6**	Programming: Exploring Python 6 lessons Exploring text-based programming with Python, the children learn how accurate syntax and nested loops control program outcomes and develop their ability to identify and fix syntax and logic errors through careful debugging.
Unit 7	Online safety: Year 6 7 lessons Learning how to navigate the internet in an informed, safe and respectful way.		