



Clipston Endowed VC Primary School – The Big Picture - Computing

Our Over-arching Curriculum Intent	That every child flourishes and enjoys learning through access to a rich, rounded, connected, coherent and progressive curriculum		
Aims of our Curriculum	To develop successful, engaged learners who enjoy learning and who are knowledgeable and skilled, make progress and achieve	To develop confident, articulate individuals, who can lead safe, healthy and fulfilling lives in the communities in which they live now and in the future.	To develop responsible, happy citizens of the world who have the capacity to make positive contributions to society.
Core School Value	“Be Kind ~ Be Your Best ~ Be Happy”		
The Intrinsic Core: Our Computing Intent.	To be able to programme using web-based software.	To be able to use applications to create digital content.	To develop digital literacy skills to collect and connect safely.
We will develop the knowledge and skills that children need to succeed	Develop children’s vocabulary acquisition and oracy skills so that they can articulate their thoughts both verbally and in written form, in order to communicate effectively in a range of situations.	Provide opportunities for children to be exposed to a wide variety of cultures, topics, themes and points of view to counter-balance the lack of diversity in our local demographic at our largely white British school, in order to prepare them for life in modern Britain.	

How we organise learning in Computing, through the development of Big Ideas

Explore and Investigate Whole School Big Ideas Aspects of knowledge that may be included:	Coding	Communication	Collection	Connection
	<p>Coding</p> <p>Competence in coding for a variety of practical and inventive purposes, using web-based software, including the application of ideas within other subjects. These may include:</p> <ul style="list-style-type: none"> Physical and on-screen objects Interactive games Block-based programming Text-based language Computational thinking 	<p>Communication</p> <p>The ability to communicate ideas well by using applications and devices throughout the curriculum. This may include:</p> <ul style="list-style-type: none"> Document creation and editing Video making Digital art Graphic design Animation 3D modelling Website building 	<p>Collection</p> <p>The ability to collect, organise and manipulate data effectively. This may include skills to:</p> <ul style="list-style-type: none"> Find, evaluate and utilise data and information using technologies and internet research Reliability of source (including fake news) Censorship Copyright, plagiarism and citing 	<p>Connection</p> <p>An understanding of the connected nature of devices. The ability to connect with others safely and respectfully, understanding the need to act within the law and with moral and ethical integrity. This may include:</p> <ul style="list-style-type: none"> Important e-safety Understanding of computer networks <p>Sharing data and information using technologies and the internet</p>

The Big Ideas are developed through the understanding of Key Themes or Schema:

Develop understanding over time of Three Key Themes of Schema	Develop Programming Skills	Create Digital Content	Develop Digital Literacy
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Implementation: How do we deliver our Curriculum? (Year A – 2021/22 Year B – 2022/23)

Early Years	Children’s development will be supported as they make sense of their physical world and their community through a variety of activities and experiences that reflect upon the Characteristics of Effective Teaching and Learning, including opportunities to explore, observe and find out about people, places, technology and the environment. A full outline of the EYFS specifically linked to Computing can be found in our Computing Overview and End Points document.		
Progression	Progression in Learning from Reception to Year 6 is outlined in our Computing Overview and End Points document.		
Big Ideas – Planned Progression of the Three Key Themes (Schema) for Key Stage One	Develop programming skills	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs.	
	Create digital content	Use technology purposefully. Organise, store, manipulate and retrieve digital content.	
	Develop digital literacy	Recognise common uses of information technology beyond school. Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	
Key Stage One Disciplinary Knowledge – In the context of...	Year 1		Year 2
	<p>New skills introduced:</p> <p>Mouse and keyboard skills:</p> <ul style="list-style-type: none"> Move cursor and left click to select. Click and drag to move items. Find letters on a keyboard and begin touch typing. <p>Introduce programming:</p> <ul style="list-style-type: none"> Understand sequence and algorithms. Sequence instructions (commands) to achieve an objective. Use distances in commands. Predict, write, execute and debug a simple program <p>Music creation:</p> <ul style="list-style-type: none"> Create a rhythm using a pattern of beats. Create digital sounds using patterns and shapes. Create a simple melody using patterns and adjust tempo. <p>Internet safety</p>		<p>New skills introduced:</p> <p>Internet research:</p> <ul style="list-style-type: none"> Understand how a web-page displays information in different ways; text, images, videos and interactive elements. Use a web-page to answer questions. <p>Programming with Scratch Jr:</p> <ul style="list-style-type: none"> Program movements. Program outputs for audio or text Find errors in a program Program inputs. Program selection/conditions (if one sprite hits another). <p>E-book creation:</p> <ul style="list-style-type: none"> Add a book cover with title, author, colour and image. Add multiple pages based on a theme. Add text on different pages. Add images on different pages to match the theme/text. Add voice recordings to match the text and theme. <p>Internet safety</p>
	<p>Retrieval practice:</p> <p>Other opportunities for computing will arise through other curriculum subject lessons, for example, internet research to find images, taking photos on the iPads, simple Word documents for publishing writing in English etc.</p>		

Big Ideas – Planned Progression of the Three Key Themes (Schema) for Lower Key Stage Two	Develop programming skills	Design, write and debug programs that accomplish specific goal, including controlling or simulating physical systems. Use sequence and repetition in programs; work with various forms of input and output.		
	Create digital content	Design and create content on a range of digital devices that accomplish given goals. Collect, classify and present data and information using a range of programs and systems.		
	Develop digital literacy	Understand computer networks, including the internet; how they can provide multiple service including the world-wide web. Use search technologies effectively. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.		
Lower Key Stage Two Disciplinary Knowledge – In the context of...	Year A		Year B	
	New skills introduced: Internet research: <ul style="list-style-type: none"> - Use search technologies to find specific pieces of information. - Understand features of an Internet Browser. - Reference the correct source of information. - Check the internet for fake news by cross-referencing facts. Comic creation: <ul style="list-style-type: none"> - iPads / Photo Apps and associated editing software / Publishing - Add, resize and organise colour or picture backgrounds - Add, resize, organise characters/object to different panels. - Add narration using text and direct speech using speech bubbles Programming in Scratch: <ul style="list-style-type: none"> - block-based coding - Use sequence, selection, and repetition in programs. - Work with variables and various forms of input and output. - Debug programs that accomplish goals. Internet safety		New skills introduced: Document editing and creation, including branching database: <ul style="list-style-type: none"> - Word / Google Docs / Pages - Copy and paste text and images and format a text for a purpose - Find and replace words and add bullet points to make lists - Experiment with keyboard shortcuts - Animation: <ul style="list-style-type: none"> - iPads / Photo Apps and associated editing software / Publishing - Create a stop-motion video by duplicating slides that include backgrounds and shapes - Animate individual elements of objects. - Create animated GIF files by animating pixels Programming in Kodu: <ul style="list-style-type: none"> - block-based coding - Create a 3D place using various design tools - Write a program to control using keyboard inputs - Write a program with conditions (selection). Internet safety	
Retrieval practice: Other opportunities for computing will arise through other curriculum subject lessons, for example, internet research for self-study, photo (copying, pasting, cropping and manipulating) for Double Page Projects, Word software for publishing writing in English etc.				
Big Ideas – Planned Progression of the Three Key Themes (Schema) for Upper Key Stage Two	Develop programming skills	Design, write and debug programs that accomplish specific goals. Solve problems by decomposing them into smaller parts. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.		
	Create digital content	Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. Collect, analyse, evaluate and present data and information.		
	Develop digital literacy	Understand computer network, including the internet; how they can provide multiple services, such as the world-wide web; and the opportunities they offer for communication and collaboration. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.		
Upper Key Stage Two Disciplinary Knowledge – In the context of...	Year A		Year B	
	New skills introduced: Graphic design: <ul style="list-style-type: none"> - PowerPoint / Google Slides / Keynotes - Add, adjust, fill, rotate and group shapes - Add and customise gradient effects - Adjust transparency / opacity for a purpose and use colour picker correctly Image editing: <ul style="list-style-type: none"> - iPads / Photo Apps and associated editing software / Publishing - Take and crop screen shots and understand ratio - Adjust colours, brightness, contrast and filters - Add drawing a text layers - Import new images as layers and resize / add effects - Save finished image to use in other projects. Programming in Scratch: <ul style="list-style-type: none"> - Program keyboard/touch screen inputs, selection (conditions), loops and random variables for unpredictability (operators). - Program inputs, conditions, sensing, random variables, operators for direction and data variables for scoring. - Use inputs, conditions, loops, sensing, costume changes and broadcasts. - Work with multiple sprites to send broadcast messages between them. Internet safety		New skills introduced: App design: <ul style="list-style-type: none"> - PowerPoint / Google Slides / Keynotes - Adjust slide size, add text and images - Add icons and text to use as navigation - Duplicate slides to create multiple pages for the app - Create hyperlinks to create navigation Data handling: <ul style="list-style-type: none"> - Excel / Google Spreadsheets / Numbers - Select and use non-adjacent cells plus resize multiple cell widths and copy/paste cells. - Use formulae to find totals, averages and maximum/minimum numbers. - Search a database for specific information - Find data and create a spreadsheet to suit it. Text-based programming (Turtle Academy / Logo): <ul style="list-style-type: none"> - text-based coding - write and change variables accurately, use fill effects, stamps, colours, loops and functions - write text commands to programme keyboard inputs in a game - Programming a Logo turtle to move and use pen - Use co-ordinates in with a Logo turtle Internet safety	
Retrieval practice: Other opportunities for computing will arise through other curriculum subject lessons, for example, PowerPoint presentations in history/geography/science, excel graphs in maths, internet research for self-study, photo (copying, pasting, cropping and manipulating) for Double Page Projects, iMovie editing for assemblies and drama, Word software for publishing writing in English etc.				
Impact	Most children achieve the End Point Milestones For Computing			
	Children become...	successful, engaged learners who enjoy learning and who are knowledgeable and skilled, make progress and achieve.	confident, articulate individuals, who can lead safe, healthy and fulfilling lives in the communities in which they live now and in the future.	responsible, happy citizens of the world who have the capacity to make positive contributions to society.