Quality First Education Trust

Computing Curriculum Overview 2023-24

Rationale	**For all children to have:** • **a secure knowledge of the fundamental principles of computing and their applications** • **the skills, language and computational thinking to solve problems, with relevance to the real world**		
Approach	• Ensuring exposure to a range of different software and programs, which are constantly reviewed and updated as the fast paced nature of technology changes • Maximising the use of practical experiences which provide the skills and awareness for students to become digitally safe and independent • Encouraging critical thinking through evaluative exercises with links to the wider curriculum • Sequencing learning to make connections between areas of computational knowledge • Providing a progressive, systematic building of vocabulary and concepts linking learning over time to enable secure building of knowledge, skills and understanding		
Nursery	• Getting to know our technology in school • Discussing technology that is used at home • Following instructions within real world contexts • Understanding and controlling simple robots		
Reception	• Using class technology safely • Following sequential instructions • Using directional language • Understanding cause and effect through mechanical and electronic toys		
Y1	**How can we program a robot?**	**How can we create digital images?**	**How can we stay safe online?**
	• Learning how to give clear and sequential instructions • Exploring the use of buttons to start and stop a program • Developing language around direction and movement • Exposure to identifying problems and debugging a program	• Developing fine motor and digital literacy through tracing patterns and shapes • Exploring different brush types and techniques to create different effects • Learning how to save and retrieve images • Learning how to both search for and important images safely from the internet	• Exploring the uses of the internet, how to find information and communicate • Learning about privacy and security and how to manage this online • Recognising that people can misrepresent themselves on the internet • Understanding how to be safe, responsible and respectful online
Y2	**How can we develop an algorithm?**	**How can we publish eBooks?**	**How can we stay safe online?**
	• Learning the components of a successful code • Developing understanding of writing code, including repeating, editing and deleting • Exploring the use of code to create a story • Incorporating multimedia into a computing program	• Developing understanding of search engines and how to discriminate between information • Learning the significance of identifying the source of images and recording this • Understanding the use of technology in the publishing process • Developing the digital literacy skills to represent information in different ways	• Learning that not all information online is accurate or true and beginning to understand how to recognise this • Understanding their digital footprint • Recognising their role and responsibility in a digital community • Learning the importance of having time offline and why this is important
Y3	**How can we write code for an action game?**	**How can we create a stop frame animation?**	**How can we stay safe online?**
	• Learning how to design and code a character for a game • Exploring the components of maze games • Incorporating stages and messages to develop a game which accomplishes a goal • Identifying and beginning to correct errors in a code • Researching computing games with a specific audience	• Exploring examples of animations and animating techniques • Designing and planning a sequenced stop frame animation • Understanding how models can be photographed and moved to create an animation • Learning how to write, record and add narration to a movie • Learning how to export animations and understand platforms where it can be published	• Learning how to differentiate between fact and opinion in an online context • Understanding how passwords can protect privacy • Developing understanding of having time offline • Recognising the importance of giving credit to other people's work • Exploring the appropriateness of what we share online
Y4	**How can we use control technology to move a robot?**	**How can we make a movie?**	**How can we stay safe online?**
	• Understanding how sensors are used in the home, work places and schools • Exploring control technology and how sensors and motors are used • Programming a robot to move across a map incorporating ultrasonic, infrared and touch sensors • Adapting and debugging a program to allow a robot to move with accuracy	• Exploring examples of short documentary films and news reports online • Understanding how to safely use search engines and select appropriate content • Learning how to use a green screen when recording and incorporating credits and music to a short film • Recording and editing a movie linked to their current topic to capture key information in a logical sequence	• Understanding how to make a judgement on the probable accuracy depending on the source and content • Recognising the difference between personal and private • Learning strategies for creating a media balance • Developing understanding of responsible choices when managing online friendships • Understanding how to have fun online safely and reporting problems
Y5	**How can we code a multi-directional, interactive game?**	**How can we research and create an informational movie?**	**How can we stay safe online?**

	• Developing code to program a complex, interactive game • Applying knowledge of debugging to solve problems within their games • Editing and improving game with different inputs and outputs • Designing an engaging background for a game, including audio-visual techniques • Creating a two-player game with different controllers for movement	• Understanding how to identify forged and altered images when using image search engines • Considering age-appropriate material and information • Identifying accurate sources of information and historical facts • Creating a storyboard to plan and design an informational movie • Incorporating images, titles, subtitles and credits • Understanding file types and how to export their film in an appropriate format • Exploring platforms which can host documents and movies	• Beginning to explore concepts of validity, reliability and evidence • Recognising clickbait information and how it encourages people to visit sites • Recognising how and why to limit time online • Exploring gender stereotypes and the importance of challenging them online • Learning strategies for recording and reporting online bullying • Understanding fair use and how to use the work of others respectfully
Y6	**How can we create a program to run on a controllable device?**	**How can we create an informative website?**	**How can we stay safe online?**
	• Learning what a micro:bit is, beginning to understand what it can do and how it works • Writing a program which incorporates LED lights and sensors • Exploring how to run a program on the device and detecting errors independently • Beginning to understand conditions within a program • Experimenting with inputs and updating variables	• Understanding how and why to use an online platform for digital creation • Incorporating a range of multimedia sources within an informative website • Learning how to include external hyperlinks and selecting appropriate sources for the audience • Making links to online safety and how to keep personal information private • Researching other websites to identify key elements for their own design • Incorporating navigation within their own website with consideration for the user	• Beginning to explore concepts of manipulation, influence and persuasion • Understanding how to increase privacy settings • Exploring the negative outcomes of spending too much time using technology • Understanding the consequences of fake social media accounts • Recognising the risks of sharing information online • Learning how to positively collaborate with others online and be part of an online community