Hopton Computing Curriculum

Key concepts: coding, communication, creativity, responsibility, problem solving

Key Threads:

Locality	Significant People	Human Influence	The Wider World	Comparison	Investigation	British Values

	Digital Literacy - e-safety - using IT beyond the school	Information Technology - creating content - searching	Computer Science - problem solving - programming - logical thinking
KS1 Year 1 of cycle	**Internet Safety – National Online Safety KS1 units on Self-image and identity, online relationships, online reputation and online bullying** * learn about the different feelings that they may have when they are online and who I can talk to about this * learn that there are different ways to communicate online with others and who I should ask before communicating online. * learn that there is some information that I should not put online and that I should ask an adult first. * learn what bullying online is and how it make other people feel	**NCCE Creating media – Digital writing** * open a word processing app and use the keyboard * add and remove text on a computer * understand how to change the look of text on a computer * choose ways of selecting text before changing it * explain why different tools have been used to change text * compare typing on a computer to writing on paper	**NCCE Moving a Robot – using floor robot** * use buttons to give commands to the BeeBot * the language of commands * moving the BeeBot forwards and backwards * using all four commands and predicting the effects *creating a program and debugging it * creating different routes to a place **Programming Animations – Espresso Coding** * understand that computer instructions are called 'code' * make objects move on screen when the program starts * make objects move when they are clicked * make several objects move when they are clicked Progression from moving a physical object to moving an object on screen.
KS1 Year 2 of cycle	**Internet Safety – National Online Safety KS1 units on Managing online information, Health, wellbeing and lifestyle, Privacy and security and Copyright and ownership** * learn about the use of the internet to find information and put simple keywords in search engines * explain some rules to keep me safe online in the home and outside it. * learn that some information can be shared online and that a trusted adults should be consulted before any personal information is shared * learn that work I create belongs to me and give it a suitable filename	**NCCE Pictograms** * count and compare objects using tally charts * understand that objects can be represented as pictures * create a pictogram using the computer * select objects by attribute and make comparisons * recognise that people can be described by attributes * understand that we can present information using a computer	**NCCE Robot Algorithms – using floor robot** * give and follow instructions and then combine several to make a sequence * understand that the order of instructions affects the sequence * make logical predictions about the outcomes of instruction and then test them * make a mat for the floor robot to follow * design a route to complete a task * decompose a task and then debug an algorithm **Buttons and instructions – Espresso Coding.** * code a button to make objects move when it is clicked * make objects move when a button is pressed and think logically * make objects hide when a button is clicked * combine different objects and buttons * debug some code

Lower KS2 Year 1 of cycle	**IT: Online Safety** * learn how to use the internet in a safe manner. * discuss the appropriate use of the internet using examples and scenarios * understand that there are ways to report issues and find support * understand the who the four trusted adults are who they can report their worries to * understand that there are ways to tackle online bullying and use social media platforms and email safely.	**NCCE - Branching databases** * learn how to create databases with yes or no answers * identify the object attributes needed to collect relevant data * learn how to create a branching database * explain why is it helpful for a database to be structured well * learn how to identify objects using a branching database * compare the information shown in a pictogram with a branching database **Word processing linked to other subject areas** *learn how to type efficiently and accurately using keyboard *change the case of letters using a keyboard *learn how to format text to ensure clarity for the reader.	**NCCE Program a UFO - Scratch** * learn about the difference between an event and an action * learn how to program a sprite to move in four different directions * adapt a program using extensions * debug a program to make sure it follows a given design * design a maze game and evaluate the project **Introduction to variables Espresso Coding** * understand how a variable can be used to keep track of the score in a game * use variables to keep track of the score in a game that uses conditional events * use a variable to keep track of the score in a game that uses conditional events * learn how to use multiple different variables and to set the value of a variable * use a variable to keep track of the score in a game where the score increases, decreases or resets when different conditions are met * debug a program to make sure it follows a given design
Lower KS2 Year 2 of cycle	**IT: Online Safety** * learn how to use the internet in a safe manner. * discuss the appropriate use of the internet using examples and scenarios * understand that there are ways to report issues and find support * understand the who the four trusted adults are who they can report their worries to * understand that there are ways to tackle online bullying and use social media platforms and email safely.		**Micro: bit physical computing** * know and understand what algorithms are * write algorithms with clear instructions * test and debug algorithms * use abstraction when planning LED images * write programs that create LED images * sequence programs * use delays in algorithms and programs * use logical reasoning to identify the output of a program * create an algorithm that meets given criteria * follow an algorithm accurately to create a digital number flashcard * write and debug programs that meets design criteria * evaluate against design criteria **NCCE Repetition in shapes – using https://turtleacademy.com/playground** * To identify that accuracy in programming is important * To create a program in a text-based language * To explain what 'repeat' means * To modify a count-controlled loop to produce a given outcome * To decompose a task into small steps * To create a program that uses count-controlled loops to produce a given outcome

Upper KS2 Year 1 of cycle	**Internet safety** * identify spam emails and what to do with them. * write citations for the websites that are used for research. * learn how to create strong passwords. * recognise when, why and how photographs we see online may have been edited. * apply online safety rules to real-life scenarios.	**NCCE Introduction to spreadsheets** * identify questions that can be answered using data. * explain that objects can be described using data. * understand how formulas work * apply formulas to data, including duplicating * to develop a plan for a spreadsheet for organising an event. * Know the importance of protecting privacy of individuals and storing this information in spreadsheets * Consider how sensitive data can be stored and transferred safely - use of passwords, not emailing sensitive data, shared Google drives.	**Introduction to HTML Espresso Coding** * get started with HTML by adding paragraphs of text to a page * add images to a web page using HTML * understand new vocabulary associated with using HTML, including: images, jpgs, text, headings and paragraphs * create a web page using headings, paragraphs and images * apply knowledge of HTML to create a web page using headings, paragraphs and images. * debug a program to make sure it follows a given design
Upper KS2 Year 2 of cycle	**How can we keep ourselves safe online?** *know the legal ages of using various platforms such as Tik Tok, Facebook, Instagram, Snapchat, WhatsApp * identify the risks of talking to people on different platforms. * identify who it is safe to speak to in their 'safe zones' * say who they can go to for help if they are upset about any online communication. *identify a range of strategies they could use to deal with situations when people are behaving irresponsibly *recognise the many forms of cyber bullying and why it can be so dangerous	**NCCE Video Production** * To understand what video is * To use filming techniques * To use a storyboard * To plan a video * To import and edit a video * To evaluate a video **NCCE Systems and Searching** * To understand what a system is * To understand how large systems work * To understand different search engines * To select search results * To understand how search results are ranked * To understand how search results are influenced	**NCCE Selection in physical computing using Crumble** * To control a simple circuit connected to a computer * To write a program that includes count-controlled loops * To explain that a loop can stop when a condition is met * To explain that a loop can be used to repeatedly check whether a condition has been met * To design a physical project that includes selection * To create a program that controls a physical computing project