Computing

St. Ethelbert's RCP

Computing Knowledge & Skills Progression

NATIONAL CURRICULUM

Aims	**KS1** Pupils should be taught to: • 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 • use technology purposefully to create, organise, store, manipulate and retrieve digital content • 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.	**KS2** Pupils should be taught to: • design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; 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 • understand computer networks 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 • 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, including collecting, analysing, evaluating and presenting data and information • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Computer Science	• Develop use of directional language • Begin to debug BeeBot activities when things go wrong • Follow	• Consolidation of algorithms • Development of directional language • Debugging • Problem solving • Following	• Consolidation of algorithms and program • To know the difference between an algorithm and a program • Plan an algorithm and then create the	• Consolidation of algorithms, program and sequences • Plan an algorithm and then create the sequence • Predict the outcome of a	• Consolidation of algorithms, program, sequences and repeat • Plan a program using a repeat command • Create a program using a repeat command • Predict the outcome	• Consolidation of algorithms, program, sequences, repeat and selection/conditional • Plan and program a quiz using selection • Predict the

	instructions • Discuss and plan simple algorithm • Predict the outcome of a simple algorithm • Debug a simple algorithm	instructions • Introduction to programs and events • Create a simple program • Recording algorithms (instructions)	program • Debug programs • Record algorithms (instructions) • introduction to sequence • Plan a simple sequence • Create a program using a sequence • Predict the outcome of a sequence and the implications of reordering the sequence • Debug a sequence	sequence • Debug a sequence • Transfer skills between different software • Introduction to repeat / loop • Plan a program using a repeat command • Create a program using a repeat command • Predict the outcome of repeat and the implications of reordering the repeat • Debug coding when the outcome is not as expected	of repeat and the implications of reordering the repeat • Debug code when the outcome is not as expected • Introduction to Selection / Conditional • Plan a program for a quiz using selection • Create a program for a quiz using selection • To develop an awareness of abstraction when programming • Predict the outcome of the program and the implications of reordering the code • Debug code when the outcome is not as expected	outcome of the program and the implications of reordering the code • Debug code when the outcome is not as expected • Introduction to Variable • Plan a program for a quiz using a variable • Create a program for a quiz using variable • To have an awareness of abstraction when programming • Predict the outcome of the program and the implications of reordering the code • Debug code when the outcome is not as expected • To plan and program a game which includes repeat, selection/conditional and a variable for a younger audience
Information technology	• Develop logging in skills • Develop basic typing skills	• Develop typing and keyboard skills • Learn to search	• Develop typing skills • Know about Ada Lovelace & Charles Babbage; how did	• Continue to develop touch type skills • Research Hedy	• Research Grace Hopper, Bill Gates & Steve Wozniak; how did they	• Research: Alan Turing: how did he develop technology and Elon Musk - how

	• Introduce the term microchip and how it has changed our lives- • Learn about Jack Kilby & Robert Noyce • Search using digital tech and key words • Know why we use passwords • Understand that people own work online	on/using the WWW and understanding if information is real or imaginary • Research Tim Berners Lee: how did he develop technology ? • Understand how computers communicate with each other using the internet and local networks	they develop technology? • Know how search engines help us find information • Understand the importance of strong passwords and how to share information safely • Know how to save work to a specific location	Lemarr & Radia Perlman; how did they develop technology? • Know about search engines, safe searching and copyright • Find, save and import images and information from the internet • How searching works and how to evaluate a website.	develop technology? • Search engines, safe searching and copyright • Find, save and import images and information from the internet • How searching works and how to evaluate a website – 5 W's • Reinforce the basics of using technology in our everyday lives. • What the internal parts of a computer are and how they work	he is developing technology now? • Evaluate a website – 5 W's • Understand copyright and how to cite references • Maintaining privacy and updating app permissions • What will technology look like in the future?
Digital Literacy	• Begin logging in • Begin to type letters using a keyboard • Develop simple keyboard skills • Use simple data handling tools • Explore the creation of a simple music track	• Continue tot develop logging in skills across websites used • Continue to develop touch typing skills • Develop keyboard skills including the introduction to shortcuts • An introduction to word processing • An introduction to creative multimedia – sound, pictures and film Simple graphs and	• Be confident in logging in • Develop typing and keyboard skills • Develop word processing skills • Introduction to new creative multimedia – PowerPoint, pictures, films and simple graphs and charts • Produce a finished piece of work demonstrating the application of digital literacy skills taught throughout the year. • Project ideas: • Literacy - create a multimedia presentation/eBook,	• Continue to develop touch typing skills including punctuation and shortcuts. • Continue to develop word processing skills • Introduction to spreadsheets and graphing • Representing data • Produce a finished piece of work demonstrating the application of digital literacy skills taught throughout the year Project ideas: Literacy - animation linked to pioneer	• Continue to develop word processing skills • Introduction to databases and graphing • Representing data • Review, edit and discuss why changes have been • made to work • Creating work appropriate to audience • Computer Aided Design (CAD) • Website evaluation	• Be independent when choosing appropriate software to create content. • Create work appropriate to audience • Use video editing software • Project ideas: Literacy - create a short film about end of Primary school • Science - Time elapse video about decomposition • Computer Science - Game creation including writing instructions and marketing materials

		charts • Project ideas: Literacy – create a story using Purple Mash 2Publish/2Create a story to combine sound, image and video • Science – create a branching database linked to your topic e.g. living things and their habitats using • Purple Mash 2Question	with a title page, incorporating images, sounds and text - create an animated story using 2Create a story to combine sound, image and video • Science - create a branching database linked to a topic e.g. plants	• Science - animation linked to living things and habitats • History - animation linked to Tudors	• Project ideas: • DT • - create a new vehicle using CAD design • Science • - create an eco-house using CAD design • Literacy/History • - Create a diorama scene with 3D figures using • CAD	
Digital Citizenship / Internet Safety	• Recognise warning signs while online and know how to get help • Understanding how to access the internet in an age-appropriate way • Know what information should be kept private • Know how to behave appropriately online • Know the rules	• Understand that people might behave and communicate differently online • Know that it is OK to say “no” • I know think carefully before adding information about myself online • Can recognise bullying behaviour • Explain how we can stay safe online in different situations and get	• Talk about digital footprint and what it means • Recognise that online identities can be different to real world identities • Understand the concepts of trust, likes and feelings while online • Know that people can overshare information that should be kept private • Recognise the impact of people being unkind online • Develop a healthy balance between	• I can discuss my Digital footprint and online vs real life identity • I respect others while online and am aware of how online behaviour and content can impact on others • Know that anyone can search online profiles for information • I know how Online Bullying may affect others • Discus positives and negatives to using technology	• Make responsible choices when sharing online and • understand how this could be used be others • Know when and how to get help • Differentiate between types of bullying • Promote health and well-being with regards to • using	• Make responsible choices when sharing online • Know when and how to get help • Critically evaluate and reject inappropriate representations online • Be kind and respect others online • Protect digital personality • Know how to capture evidence of online bullying • Know of common systems that regulate

	for keeping safe online	help if we need it	online and real-life activity	•	technology	age-related content • Promote health and well-being with regards to using technology