



# CASTLETOWN PRIMARY SCHOOL



## Computing

### Essential Opportunities

Key Stage 1	Key Stage 2
<ul style="list-style-type: none"><li>• Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions.</li><li>• Write and test simple programs.</li><li>• Use logical reasoning to predict the behaviour of simple programs.</li><li>• Organise, store, manipulate and retrieve data in a range of digital formats.</li><li>• Communicate safely and respectfully online, keeping personal information private and recognise common uses of information technology beyond school.</li></ul>	<ul style="list-style-type: none"><li>• Design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</li><li>• Use sequence, selections and repetition in programs; work with variables and various forms of input and output; generate appropriate inputs and predicted outputs to test programs.</li><li>• Use logical reasoning to explain how a simple algorithm works, detect and correct errors in algorithms and programs.</li><li>• 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.</li><li>• Describe how internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely.</li><li>• Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.</li></ul>

Year 1 Year 2 Year 3 Year 4 Year 5 Year 6 (If areas are not highlighted this means they need to be covered by both year groups)

### Essentials for Progress - Computing

Learning Objectives	Milestone 1 (KS1)	Milestone 2 (LKS2)	Milestone 3 (UKS2)
<p><b>To code</b> (Algorithms using Scratch)</p>	<p>Enter commands into a device to control movement/operation.</p> <p>Know where errors have occurred.</p> <p>Identify errors in instructions.</p> <p>Create a simple sequence of commands to meet a given outcome.</p> <p>De-bug a command.</p> <p>Use specific commands accurately and precisely within a routine/sequence to make a device respond in a given manner.</p> <p>Save or record their routine to enable editing and de-bugging.</p> <p>Analyse which commands are needed to accurately control a device.</p> <p>Run and test their routine/sequence identifying errors and malfunctions.</p> <p>De-bug and amend their sequence of instructions to achieve the given manner/expected outcome.</p>	<p>Design and write a routine which includes repeated commands to achieve a series of actions.</p> <p>Debug by correcting errors in a routine to enable accurate results.</p> <p>Articulate the reasons for errors and modifications.</p> <p>Construct procedures/routines to control an external device</p> <p>Identify and correct errors in their routines</p> <p>Use simple sensors to react to an input with accuracy</p>	<p>Analyse, reflect on and improve their use of commands to control variables, sensors and sequences to achieve a given outcome.</p> <p>Evaluate their work, describing how they have achieved the outcome and what was needed to refine and improve the process</p> <p>Construct complex sequences which incorporate:</p> <ul style="list-style-type: none"> <li>• Repeated sequences</li> <li>• Sub –routines</li> <li>• Multiple and inter-related variables</li> <li>• Efficient operation to meet required brief</li> </ul>

<p><b>To connect</b> (Digital Content and the Internet)</p>	<p>Sort manually by characteristic using different criteria – colour, size, type.</p> <p>With the teacher’s input, talk about what is shown by simple charts and graphs</p> <p>Recognise that some objects need more than one criterion to be classified.</p> <p>Enter text and create pictures using simple word processors and graphics packages.</p> <p>Find and open files saved within their learning platform or the classroom computer.</p> <p>Add to or edit work, and re-save and rename their work.</p> <p>Recognise the file types and file extensions for documents, picture, numerical data.</p> <p>Be able to explain what is shown by a histogram or pie chart on screen.</p> <p>With help from an adult, find age related music and news.</p>	<p>Undertake simple searches on a pre-compiled locally hosted computerised database or on the internet within a walled garden or with adult help.</p> <p>Use appropriate terminology when using data bases – e.g. field, record.</p> <p>With help, create and write a class blog, upload a piece of work onto the school’s learning platform, email attachment or website.</p> <p>Enter data accurately into a database which has already been constructed.</p> <p>Test the accuracy of their data base through searching and knowing what to expect and what is inaccurate.</p> <p>Construct searches with two criteria to answer a given problem using locally created data bases and the internet under supervision.</p> <p>Enter searches in “Safe” internet search engines and evaluate the resulting information.</p> <p>Use a variety of software to create text, images and sound to be published online.</p>	<p>Plan and design the construction of a database to meet a specific need – e.g. Gaining awareness of healthy eating habits.</p> <p>Develop routines to test for accuracy and appropriateness</p> <p>Plan research based on other class topics and identify what information is needed before searching the internet.</p> <p>Define relevant search criteria and use these to search the internet for appropriate resources to support their learning.</p> <p>Explain and use keywords appropriately to prepare a project for uploading to the internet.</p> <p>Accurately and efficiently find, review, verify, compare and contrast information from the internet and other sources to meet a given brief or need.</p> <p>Independently design, construct, compile and test a data base linked to a specific project or topic.</p> <p>Analyse and be able to critically evaluate the results of searches from the internet.</p>
---	---	---	---

<p><b>To communicate</b> (Application of IT)</p>	<p>Recognise and talk about things within the home and school which are operated by technology.</p> <p>Talk about and use everyday appliances and objects outside schools which are electronic and controlled by electronic systems.</p> <p>Use simple word processors and other software to create simple presentations to support their work.</p>	<p>Create, save, edit and re-purpose work through common software applications such as word processors, graphics packages and databases.</p> <p>Send simple emails.</p> <p>Save work to their learning platform.</p> <p>Find their work from an identified folder or work area on a learning platform or online application, renaming as a new version and re-saving.</p> <p>Use desktops and hand held devices to work with a range software such as online word processors.</p> <p>Choose an appropriate application to present information for a given audience and purpose. e.g. – word processors, presentation or graphics program.</p> <p>Be selective about the type and quality of resources identified and used to support learning.</p>	<p>Select from and use text, sound and pictures, synthesise data found on news and information sites. Begin to re-purpose these to support their learning.</p> <p>Independently, access information or services which are stored outside school or home.</p> <p>Identify and reference work which is not their own.</p> <p>Use a wide variety of software and applications to produce work to meet a given brief or specification. e.g. be able to use a wide range of tools within a presentation package and incorporate content from other online archives.</p> <p>Connect to an approved wireless network.</p> <p>Design, create and evaluate a piece of work within a given brief which needs to be researched, planned and developed using a wide range of material from a number of online and physical sources.</p> <p>Use online resources and online communication safely to gather opinions and data to support the project.</p> <p>Make work available to an external audience by uploading files to a remote host.</p> <p>Describe how others can access work remotely.</p>
--	---	--	--

<p><b>To use safely</b> (Online Safety and Appropriate Use)</p>	<p>Identify personal information.</p> <p>Recognise that electronic communication is between real people.</p> <p>Discriminate between people they know and strangers.</p> <p>Name who to tell if they are worried.</p>	<p>Use individual passwords and know that these are private.</p> <p>Consistently log on and log off.</p> <p>Be consistent in the polite use of electronic communications.</p> <p>Have good password usage and behaviours.</p> <p>Attach a file to an email and send to others.</p> <p>Recognise content which is freely available and that which needs permission for use.</p>	<p>Act with confidence and deal appropriately with inappropriate material or receive inappropriate approaches online.</p> <p>Apply practices to protect users' identities.</p> <p>Recognise ownership with confidence and acknowledge other's work and intellectual property.</p> <p>Follow established and good practice for passwords and logging off.</p> <p>Recognise instances of junk mail, phishing and spam.</p>
---	---	--	--