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| **Progression in Computing skills at Stakesby Primary Academy** |

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| **Year Group** | **e-Safety** | **Digital Literacy** | **Coding** |
| **1** | * Understand how to keep themselves safe while using digital technology. * Aware that information stored on the web or transmitted via the internet is available to other people. * Understand what to do if they see disturbing content online at home or at school. * Know to close the laptop lid or turn the tablet over if they find content, such as inappropriate images, which might disturb them or other children. They should know to tell their teacher or their parents if this happens. | * Use a range of digital technologies to store and access digital content. * Create own original digital content using a range of technologies. * Understand that information on the internet can be seen by others. | * Understand algorithms as sequences of instructions in everyday contexts. * Program Bee Bots or the Bee Bot app using **sequences**of instructions to implement an **algorithm**. * Give explanations for what they think a program will do. * Explain to the teacher, and to peers, what they think a program will do. |
| **2** | * Understand that they should not share personal information online. * Understand that personal information should be kept private. * Understand what to do if they have concerns about content or contact online. * Show an awareness of how IT is used for a range of purposes beyond school. * Name a number of purposes for which IT is used beyond school. | * With a given purpose, the child can use a range of digital technologies to retrieve, organise and store digital content. * Create and edit original content for a given purpose using digital technology. | * Recognise that common * sequences of instructions or sets of rules can be thought of as algorithms. * Program on screen using sequences of instructions to implement an algorithm. * Create a simple program with a particular goal or purpose in mind. * Debug any errors in their own code. |
| **3** | * Use digital technology safely and show respect for others when working online. * Recognise unacceptable behaviour when using digital technology. * Know who to talk to about concerns and inappropriate behaviour in school. * Decide whether a web page is relevant for a given purpose or question. | * Use email and videoconferencing in class. * Search for information within a single site. * Understand that search engines select pages according to keywords found in the content. * Can use a range of software and programs on laptop or tablet computers with some degree of independence. * Collect and present information. | * Design and write a program using a block language, without user interaction. * Explore simulations of physical systems on screen. * Use sequence in programming. * Write a program to produce output on screen. * Explain a simple, sequence- based algorithm in their own words. * Use logical reasoning to detect errors in programs. |
| **4** | * Demonstrate that they can act responsibly when using computers. * Understand the difference between acceptable and unacceptable behaviours when using digital technology. * Decide whether digital content is relevant for a given purpose or question. | * Use multiple programs on laptop or tablet computers to achieve particular goals. * Plan, research and develop a topic. Plan how they could contribute to a shared collaboration and then do so; plan and create a presentation. * Collect and present data. * Use a standard search engine to find information. * Understand that search engines rank pages according to relevance. | * Write a program in Tynker (or similar) in which the user has to provide some input. * Work with others to plan a project. * Use sequence and repetition in programs. * Write a program that accepts keyboard input and produces on-screen output. * Explain an algorithm using sequence and repetition in their own words. * Use logical reasoning to detect and correct errors in programs. |
| **5** | * Show that they can think through the consequences of their actions when using digital technology. * Identify principles underpinning acceptable use of digital technologies. * Know a range of ways to report concerns and inappropriate behaviour in a variety of contexts. * Form an opinion about the effectiveness of digital content. | * Choose for themselves from a range of available programs on laptops, tablets or cloud-based services to achieve particular goals. * Analyse and evaluate information from multiple sources. * Use computers to collect numerical data in a spreadsheet and present this to an audience. * Identify key elements of a spreadsheet. | * When given an algorithm for a particular purpose, e.g. a rule-based algorithm for a computer game or a sequence of steps to draw a geometric pattern, the child can use logical reasoning to identify possible errors in the algorithm, explaining why they believe the algorithm is incorrect. * Use sequence, selection, repetition and variables in programs. * Explain a rule-based algorithm in their own words. * Design, write and debug a program using code language based on their own ideas. * Plan a solution to a problem using decomposition. |
| **6** | * Discuss likely and potential consequences of their actions when using digital technology in a range of contexts. * Consider questions of ethics and morality in relation to digital technology. * Consider how they would determine the best way to address particular concerns or inappropriate behaviour. * Identify some principles they could use to evaluate digital content, such as absence of bias, effective design, acknowledgement of sources, agreement with other sources, the reputation of the author, any indication that it has been checked or reviewed, absence of errors or logical inconsistencies. * Make use of an online tool to plan, carry out and then evaluate a collaborative project (such as developing an app). | * Show some understanding of the differences between, and relative merits of, different applications, operating systems and hardware. * Discuss the differences between smartphones, tablets, laptops and servers. * Plan, design and implement a system with multiple, interrelated components with a given goal in mind. * Design, write and debug a program based on their own ideas, using iterative development to make improvements. * Understand that computer networks transmit information in a digital (binary) format. | * Apply the principle of decomposition to help them to understand how complex systems operate. * Use sequence, selection, repetition, variables and procedures in programs. * Give clear and precise logical explanations of a number of algorithms. * Suggest ways in which the efficiency of algorithms and programs can be improved. |