St James' First School

Computing Skills Progression Map

Reviewed December 2022

Athletics	Year 1	Year 2	Year 3	Year 4
Computer Science	- Understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. - Know that a computer program turns an algorithm into code that the computer can understand - Work out what is wrong with a simple algorithm when the steps are out of order, e.g. The Wrong Sandwich in Purple Mash and can write their own simple algorithm, e.g. Colouring in a Bird activity. - Know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code, e.g. Bubbles activity in 2Code. - Read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program. Children can, for example, interpret where the turtle in 2Go challenges will end up at the end of the program.	- Explain that an algorithm is a set of instructions to complete a task. - When designing simple programs, show an awareness of the need to be precise with their algorithms so that they can be successfully converted into code. - Create a simple program that achieves a specific purpose. They can also identify and correct some errors, e.g. Debug Challenges: Chimp. Children's program designs display a growing awareness of the need for logical, programmable steps. - Identify the parts of a program that respond to specific events and initiate specific actions. For example, write a cause and effect sentence of what will happen in a program.	- Turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts. Their design shows that they are thinking of the desired task and how this translates into code. - Identify an error within their program that prevents it following the desired algorithm and then fix it. - Demonstrate the ability to design and code a program that follows a simple sequence. - Experiment with timers to achieve repetition effects in their programs. Understand the difference in the effect of using a timer command rather than a repeat command when creating repetition effects. - Designs for programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. For example, repetition and use of timers. - Attempt to 'step through' more complex code in order to identify errors in algorithms and can correct this. e.g. In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately. - List a range of ways that the Internet can be used to provide different methods of communication. - Can use some of these methods of communication, e.g. being able to open, respond to and attach files to emails using 2Email. - Can describe appropriate email conventions when communicating in this way	- When turning a real-life situation into an algorithm, design shows that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition. - Make more intuitive attempts to debug their own programs. - Use timers to achieve repetition effects are becoming more logical and are integrated into their program designs. - Understand 'IF statements' for selection and attempt to combine these with other coding structures including variables to achieve the effects that they design in their programs. As well as understanding how variables can be used to store information while a program is executing, they are able to use and manipulate the value of variables. - Make use of user inputs and outputs such as 'print to screen'. e.g. 2Code. - Think of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. For example, 'IF' statements, repetition and variables. - Trace code and use step-through methods to identify errors in code and make logical attempts to correct this. In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately. - Recognise the main component parts of hardware which allow computers to join and form a network. - Understand the online safety implications associated with the ways the internet can be used to provide different methods of communication is improving.

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Information Technology	- Sort, collate, edit and store simple digital content e.g. children can name, save and retrieve their work and follow simple instructions to access online resources, use Purple Mash 2Quiz example (sorting shapes), 2Code design mode (manipulating backgrounds) or using pictogram software such as 2Count.	- Demonstrate an ability to organise data using, for example, a database such as 2Investigate and can retrieve specific data for conducting simple searches. - Edit more complex digital data such as music compositions within 2Sequence. - Demonstrate confidence when creating, naming, saving and retrieving content. - Use a range of media in their digital content including photos, text and sound.	- Carry out simple searches to retrieve digital content. They understand that to do this, they are connecting to the internet and using a search engine such as Purple Mash search or internet-wide search engines. - Collect, analyse, evaluate and present data and information using a selection of software, e.g. using a branching database (2Question), using software such as 2Graph. - Consider what software is most appropriate for a given task. They can create purposeful content to attach to emails, e.g. 2Respond.	- Understand the function, features and layout of a search engine. They can appraise selected webpages for credibility and information at a basic level. - Make improvements to digital solutions based on feedback. - Make informed software choices when presenting information and data. - Create linked content using a range of software such as 2Connect and 2Publish+. Children share digital content within their community, i.e. using Virtual Display Boards.
Digital Literacy	- Understand what is meant by technology and can identify a variety of examples both in and out of school. - Make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair. - Understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. - Take ownership of their work and save this in their own private space such as their My Work folder on Purple Mash.	- Effectively retrieve relevant, purposeful digital content using a search engine. They can apply their learning of effective searching beyond the classroom. They can share this knowledge, e.g. 2Publish example template. - Make links between technology they see around them, coding and multimedia work they do in school e.g. animations, interactive code and programs. - Know the implications of inappropriate online searches. - Understand how things are shared electronically such as posting work to the Purple Mash display board. - Develop an understanding of using email safely by using 2Respond activities on Purple Mash and know ways of reporting inappropriate behaviours and content to a trusted adult.	- Demonstrate the importance of having a secure password and not sharing this with anyone else. - Explain the negative implications of failure to keep passwords safe and secure. - Understand the importance of staying safe and the importance of their conduct when using familiar communication tools such as 2Email in Purple Mash. - Know more than one way to report unacceptable content and contact.	- Explore key concepts relating to online safety using concept mapping such as 2Connect. - Help others to understand the importance of online safety. - Know a range of ways of reporting inappropriate content and contact.