



## COMPUTING: CRUCIAL LEARNING



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| <b>Year 1</b> | Digital Painting       | <ol style="list-style-type: none"><li>1. Pupils know that a picture can be created on a digital device</li><li>2. Pupils can recognise that computers can create a range of art.</li></ol>                                                                                                                                                                                |
| <b>Year 1</b> | Digital Writing        | <ol style="list-style-type: none"><li>1. Pupils know that a keyboard is used to enter text into a computer</li><li>2. Pupils know that the appearance of text can be changed.</li></ol>                                                                                                                                                                                   |
| <b>Year 1</b> | Grouping Data          | <ol style="list-style-type: none"><li>1. Pupils explain how objects have been grouped</li><li>2. Pupils know that labels are used to identify a group with similar characteristics</li></ol>                                                                                                                                                                              |
| <b>Year 1</b> | Moving a robot         | <ol style="list-style-type: none"><li>1. Pupils can explain what a given command does</li><li>2. Pupils can predict the outcome of a sequence involving up to four commands</li><li>3. Pupils can understand that a program is a set of commands that a computer can run</li><li>4. Pupils know that a series of instructions can be issued before pressing go.</li></ol> |
| <b>Year 1</b> | Programming Animations | <ol style="list-style-type: none"><li>1. Pupils can explain what a sprite is</li><li>2. Pupils can compare different programming blocks</li><li>3. Pupils know a series of commands can be joined together to form a program</li><li>4. Understand that a program is a set of commands a computer can run</li></ol>                                                       |

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| <b>Year 2</b> | Digital Photography | <ol style="list-style-type: none"> <li>1. Pupils can explain some aspects of taking a good photograph</li> <li>2. Pupils know that a photo can be portrait or landscape</li> </ol>                                                                                                                                                                     |
| <b>Year 2</b> | Digital Music       | <ol style="list-style-type: none"> <li>1. Pupils can follow a rhythm pattern</li> <li>2. Pupils can understand that a computer can generate different sounds</li> <li>3. Pupils know that a computer can be used to make a sequence of notes</li> <li>4. Pupils understand how pattern and rhythm can be used to depict an animal noise</li> </ol>     |
| <b>Year 2</b> | Pictograms          | <ol style="list-style-type: none"> <li>1. Pupils can create a pictogram using a computer</li> <li>2. Pupils can recognise information can be sorted into attributes</li> </ol>                                                                                                                                                                         |
| <b>Year 2</b> | Robot Algorithms    | <ol style="list-style-type: none"> <li>1. Pupils understand a series of instructions</li> <li>2. Pupils understand different algorithms by changing the sequence of commands</li> <li>3. Pupils predict what a sequence of commands will do</li> </ol>                                                                                                 |
| <b>Year 2</b> | Programming Quizzes | <ol style="list-style-type: none"> <li>1. Pupils know that a sequence can be started using a variety of event blocks</li> <li>2. Pupils know that a sequence has an outcome</li> <li>3. Pupils know the backgrounds can be changed through the programming blocks</li> <li>4. Pupils understand the role of the numbers on ScratchJr blocks</li> </ol> |

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| <b>Year 3</b> | Creating a Poster  | <ol style="list-style-type: none"> <li>1. Pupils can use a Chromebook safely and log in independently</li> <li>2. Pupils know the key features of a poster</li> <li>3. Pupils can plan, make, edit and present their posters.</li> </ol>                                 |
| <b>Year 3</b> | Stop Motion        | <ol style="list-style-type: none"> <li>1. Pupils can explain how stop-frame animation works.</li> <li>2. Pupils can create a stop-frame animation using small changes.</li> <li>3. Pupils can improve an animation using feedback and media.</li> </ol>                  |
| <b>Year 3</b> | Databases          | <ol style="list-style-type: none"> <li>1. Pupils can create yes/no questions to sort objects.</li> <li>2. Pupils can create a branching database using attributes.</li> <li>3. Pupils can test and improve a branching database.</li> </ol>                              |
| <b>Year 3</b> | Sequencing Sounds  | <ol style="list-style-type: none"> <li>1. Pupils can use a series of scratch sequence blocks to create their own program</li> <li>2. Pupils can create their own version of a piano using Scratch Blocks.</li> </ol>                                                     |
| <b>Year 3</b> | Events and Actions | <ol style="list-style-type: none"> <li>1. Pupils know how to program a sprite to move in 4 directions.</li> <li>2. Pupils can explore movement in the context of a maze and a sprite.</li> <li>3. Pupils, plan, program, edit and present their maze program.</li> </ol> |

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| <b>Year 4</b> | Vector Drawings                  | <ol style="list-style-type: none"> <li>1. Pupils understand why some artists use computers to help them</li> <li>2. Pupils can use different colours, brushes and tools to create art</li> <li>3. Pupils can plan, edit, implement and evaluate a piece of their digital art.</li> </ol> |
| <b>Year 4</b> | Audio Production/<br>Podcasts    | <ol style="list-style-type: none"> <li>1. Pupils recognise why we use different types of media to convey information, e.g. text, image, audio, video.</li> <li>2. Pupils plan and create a simple podcast</li> </ol>                                                                     |
| <b>Year 4</b> | How Information is Shared Online | <ol style="list-style-type: none"> <li>1. Pupils understand that the World Wide Web is a part of the internet.</li> <li>2. Pupils know how to access and use the World Wide Web.</li> <li>3. Pupils know that not everything on the internet is real or true.</li> </ol>                 |
| <b>Year 4</b> | Repetition in Shapes             | <ol style="list-style-type: none"> <li>1. Pupils understand repetition and loops within programming.</li> <li>2. Pupils will create programs by planning, modifying, and testing commands to create shapes and patterns.</li> </ol>                                                      |
| <b>Year 4</b> | Repetition in Games              | <ol style="list-style-type: none"> <li>1. Pupils recognise repetition can be used in all coding.</li> <li>2. Pupils understand count controlled and infinite loops.</li> <li>3. Pupils plan, implement, edit and present their game using loops and repetition.</li> </ol>               |

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| <b>Year 5</b> | How do search engines help us find and evaluate information safely and effectively? | <ol style="list-style-type: none"> <li>1. Pupils understand that the internet is a global network of connected devices, and that search engines index and rank information to help users find relevant results.</li> <li>2. Pupils recognise that search results are not always reliable, and can explain simple ways to check whether information is trustworthy.</li> <li>3. Pupils can use keywords effectively to refine search results and find specific information, images and data.</li> </ol> |
| <b>Year 5</b> | How do we design and build a web page for a specific purpose?                       | <ol style="list-style-type: none"> <li>1. Pupils understand that web pages are made using HTML and structured using elements such as headings, paragraphs, images and links.</li> <li>2. Pupils can create a simple web page that includes content designed for a specific audience and purpose.</li> <li>3. Pupils understand that content online must be used responsibly, including respecting copyright and choosing appropriate media.</li> </ol>                                                 |
| <b>Year 5</b> | How do databases help us organise and interpret information?                        | <ol style="list-style-type: none"> <li>1. Pupils understand that a flat-file database stores information in records and fields that can be searched, sorted and filtered.</li> <li>2. Pupils can use a database to answer questions by selecting and comparing data.</li> <li>3. Pupils recognise that data can be structured in different ways to help us find patterns and make decisions.</li> </ol>                                                                                                |
| <b>Year 5</b> | How can we use selection to control physical computing devices?                     | <ol style="list-style-type: none"> <li>1. Pupils understand that a micro:bit is a programmable device that can take inputs, process them using code, and produce outputs.</li> <li>2. Pupils can use selection (if/then conditions) to make a micro:bit respond differently to different inputs.</li> <li>3. Pupils can design and debug simple programs using inputs such as buttons, sensors and on-screen simulation.</li> </ol>                                                                    |
| <b>Year 5</b> | How can we use selection to build interactive quiz programs?                        | <ol style="list-style-type: none"> <li>1. Pupils understand that selection allows a program to make decisions based on user input.</li> <li>2. Pupils can create a quiz in Scratch that uses conditions to determine correct and incorrect answers.</li> <li>3. Pupils can use sequencing, selection and repetition together to build an interactive program.</li> </ol>                                                                                                                               |

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| <b>Year 6</b> | How do I use a computer to present information effectively? | <ol style="list-style-type: none"> <li>1. Pupils understand that digital communication allows people to collaborate across different locations in real time.</li> <li>2. Pupils recognise the importance of respectful, responsible and safe communication online, including managing digital identity.</li> <li>3. Pupils can evaluate different communication tools and choose appropriate methods for different purposes.</li> </ol> |
| <b>Year 6</b> | What makes a great film?                                    | <ol style="list-style-type: none"> <li>1. Pupils understand that video is constructed through sequencing, editing and combining visual and audio elements.</li> <li>2. Pupils can plan, record and edit a video to communicate a clear message for a specific audience.</li> <li>3. Pupils understand that editing choices influence meaning and impact.</li> </ol>                                                                     |
| <b>Year 6</b> | Why do we use spreadsheets?                                 | <ol style="list-style-type: none"> <li>1. Pupils understand that spreadsheets use cells, rows and columns to organise data and can perform calculations using formulae.</li> <li>2. Pupils can use simple formulae to model real-world situations and answer questions.</li> <li>3. Pupils can present data using charts and explain what the data shows.</li> </ol>                                                                    |
| <b>Year 6</b> | How do I program variables in games?                        | <ol style="list-style-type: none"> <li>1. Pupils understand that variables store information that can change during a program.</li> <li>2. Pupils can use variables in Scratch to control and track the state of a game.</li> <li>3. Pupils can combine variables, selection and repetition to design and improve interactive games.</li> </ol>                                                                                         |
| <b>Year 6</b> | How do I program to Sense Movement?                         | <ol style="list-style-type: none"> <li>1. Pupils understand that micro:bit devices can use sensors to detect changes in the environment.</li> <li>2. Pupils can create programs that use sensor data and variables to produce different outputs based on movement or input.</li> <li>3. Pupils can debug and refine programs that respond to real-world inputs using selection and variables.</li> </ol>                                |