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| **Year 4 Autumn 2 – Coding** | | |
| **Key Images** | **Key Learning** | |
|  | * To use selection in coding with the ‘if/else’ command. * To understand and use variables in 2Code. * To use flowcharts for design of algorithms including selection. * To use the ‘repeat until’ with variables to determine the repeat. * To learn about and use computational thinking terms decomposition and abstraction. | |
| **Key Vocabulary** | **Key Questions** |
| * Action * Alert * Algorithm * Bug * Code Design * Command * Control * Debug/Debugging * Design Mode * Event * Get Input * If * If/Else * Input * Output * Object * Repeat * Selection * Simulation * Timer * Variable | **Explain the stages of the design, code, test, debug coding process.**  This is a process to go through as you create a program using coding   * Design: Create a design which could be a flowchart, a labelled diagram or a storyboard. This helps to think through the algorithms required * Code: code the algorithms usbng9in and adapting the design. * Test and Debug: see if the program works and fix any errors.   **How can variables and if/else statements be useful when coding programs with selection?**  The variable could be set either to 0 or 1 and this could be changed by user action or a timer. If/else statement outcomes could depend upon the value of the variable.  **What do the terms decomposition and abstraction mean. Use examples to explain them.**  **Decomposition** is breaking a task into its component parts so that each part can be coded separately.  If you were coding a game of chess, you could decompose into the moves of the different pieces and the setup of the playing space.  **Abstraction** is removing unnecessary details to get the program functioning. In the example, the colour and size of the squares is not important to game play. |



Reference to