

Year 4 Computing Knowledge Organiser: Unit 4.1 – Coding

Key Images

Open design mode in 2Code



Switch to code mode in 2Code



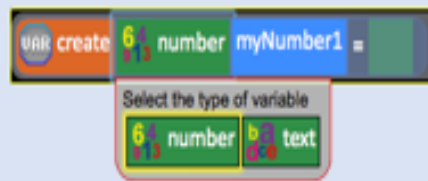
An 'if/else' command



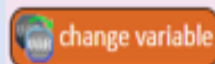
Repeat until command



Creating a variable in 2Code



A change variable block



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

- 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

Key Questions

- 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 using 2Code 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.