St John Fisher RC Primary School
Year Six Knowledge Organiser – Autumn Two – Computing – Programming

What we will be learning	Key Facts to Remember
Weeks 1 - 4 **I know:** • How to use micro:bit and MakeCode. • How to use sensors and variables. • How to use logic in programming. • How to program with sensors. • How to complete project development. • How to evaluate and enhance.	• I can understand the basic functions and features of the micro:bit and how it can be programmed using MakeCode. • I can recognise different types of sensors and their purposes, including how they can be used to gather data. • I can create and modify code using block-based programming and understand the difference between input and output in a program. • I can apply logic statements (if, else) to make decisions in their code, as well as using loops for repetitive tasks. • I can develop a project from conception to execution, including planning, programming, and testing. • I can evaluate their projects upon completion, identifying strengths and areas for improvement.

Key Vocabulary and Glossary

- **micro:bit** - A pocket-sized programmable computer that allows students to learn programming and electronics.
- **MakeCode** - A web-based programming platform that provides a block-based coding environment for the micro:bit.
- **Sensor** - A device that detects and measures physical properties such as light, temperature, or motion.
- **Variable** - A named space in memory that stores a value that can change during a program's execution.
- **Logic** - Reasoning that is used in programming to make decisions based on conditions (e.g., if statements).
- **Programming** - The process of creating instructions for a computer to perform certain tasks.
- **Code** - The set of instructions written in a programming language that the computer understands.
- **Algorithm** - A step-by-step procedure or formula for solving a problem.
- **Output** - The information or data that comes out of a system after processing.
- **Input** - Data or signals that are sent into a system for processing.
- **Loop** - A programming construct that repeats a set of instructions until a specified condition is met.
- **Condition** - A statement in programming that controls the flow of execution based on whether it evaluates to true or false.
- **Debugging** - The process of identifying and fixing errors in a program.

Interesting Facts

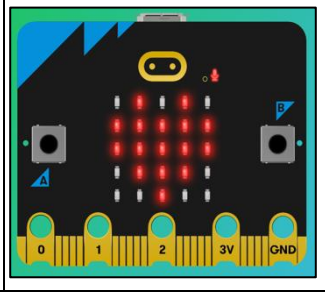
- The micro:bit was developed by the BBC to help introduce programming to primary school students and is used in over 60 countries.
- The micro:bit has a built-in LED matrix that can display text, numbers, and simple animations.
- You can connect the micro:bit to other devices and sensors to create interactive projects, such as a weather station, a heart rate monitor, or a robotic car.
- Over 1 million micro:bits were distributed to students in the UK in 2016 as part of the initiative to improve digital skills among young people.

Apps & Software



MakeCode

MakeCode is a free, online, block-based programming platform created by Microsoft that simplifies learning to code for beginners. It offers an easy-to-use interface for building programs, especially for the BBC micro:bit, but also allows for creating games, mods, and other projects.



BBC Micro:Bit

The BBC micro:bit is a pocket-sized, programmable microcomputer designed to help students learn about coding and digital making. It features an LED light display, buttons, sensors, and other features, allowing users to create a wide range of projects.

Seesaw

SeeSaw

An educational platform that can be used to create an electronic portfolio of children's completed digital work.