

How can machines be coded to help us out?



Coding Y3



Key learning

- Follow steps to build and code a robot using instructions.
- Code the motor block to work in different ways and at different speeds.
- Add different codes to the robot including colour changes and their own sounds
- Use motion and tilt sensors and code them to work in different ways
- Add different code to the robots including loops and functions
- Adapt Milo with different coding to carry out a particular role



Comput

Empowered Learner: 

- Use what I know to help when using new technology

Computational



- Begin to use a specific algorithm
- Detect and respond to changes in the environment
- Begin to use loops and functions
- Create and edit functions and loops to form a program

Innovative



- Use a design process and test some of my ideas



Key vocabulary

Motor block	A piece of technology which controls the movements of the robot.
Code	Commands or instructions which tell a robot what tasks to perform.
Motion	The process of moving or being moved.
Debugging	Finding and fixing problems in a computer program or algorithm.
Sensor	A device which detects physical objects or movements.
Tilt sensor	A device which measures which angle something is at.
Loop	A sequence of instructions which is repeated until told to stop.
Function	A chunk of code that is an instructions e.g. turn right might be made up of 3 lefts turns.
Adapt	Modify or make something suitable for a specific use.
Program	Provide a set of instructions (code) to complete a task.
Prototypes	A first design of a device that may be altered and changed after testing.



Coding - Our Learning Journey

Year 1

- Using simple commands to move and change direction
- Editing characters and backgrounds

Year 2

- Using repeat and forever loops
- Put a range of codes together to make a sequence
- Debugging simple programmes

Year 3

- Use commands, for loops and conditionals
- Use different controls and conditionals including when and if
- Use sensors and code them to work in different ways

Year 4

- Create and edit functions
- Include functions in a game on Scratch
- Use logic for conditional commands, including 'else' command

Year 5

- Use comparison and logical operators in a range of programmes
- Create different variables for speed and proximity sensors in robots
- Code sensors for different purposes

Year 6

- Use variables to keep score in a created game
- Create a game using a range of functions, loops, operators and variables
- Begin to use Python to code Micro:Bits