Computing Learning Blocks: Programming

Sutton Veny CofE Primary School

Year 6	Send and receive 'radio' signals to and from other devices (Micro:bit)	Include variables such as counters (Micro:bit light level meter)	Use multiple 'if/else' statements to generate multiple reactions to variables
	Use variables to create sliders, making a manageable formula for making shape patterns. (Scratch)	Use arrow keys to move and turn sprites. (Scratch)	Create variables to control speed (Scratch)
	Explain how the algorithm works and use logical reasoning to detect errors.		
Year 5	Use 'if/else' block so computer responds differently according to variable, e.g light or sound. (Micro:bit)		
	Use x and y coordinates to control position and movement parameters (Scratch)	Use inner and outer loops to create complex shape patterns (Scratch)	
	Use repeats within repeats (procedures) to create complex shapes (Probots)	Accurately predict what will happen	
Year 4	Introduce a variety of inputs to trigger a response including radio (Micro:bit)	Introduce sensors as a way of measuring external stimuli (Micro:bit)	
	Create a game using arrow keys and random movement (Scratch)	Include touch interaction between two sprites (Scratch)	
	Create procedures as a way of creating efficient algorithms (Code Frozen/CRF)	Use 'if/else' block so computer checks a condition, and then does one thing OR another. (Studio Code)	
Year 3	Create interactive speech by using 'broadcast' and 'receive' (Scratch)	Animate a sprite in a variety of ways including: spin, glide, change size/colour (Scratch)	
	Create an algorithm for a screen turtle (Textease Blue level) to draw a square using repeat tool	Use shape algorithm formula altering variables (angles and repeats) to create regular polygons (Textease Turtle)	Introduce repeats within repeats to create complex shapes (Textease Turtle)
	Follow instructions to build robot to include motor and moving parts (WeDo)	Create algorithm (input) for robot to include outputs: sound, sending and receiving a message, repeated movement (WeDo)	
	Understand use of 'if' block so computer can make 'decisions' (Studio Code)	Introduce 'if/else' block so computer checks a condition, and then does one thing OR another.	
	Introduce procedures as a way of using less blocks. (LightBot Yr2/Studio Code Yr 3)		
Year 2	Add multiple sprites with differing codes (Scratch Jr)	Add text, selecting colour and size (Scratch Jr)	Create interactive speech by sending and receiving a message (Scratch Jr)
	Create algorithms using fewest code blocks	Use 'repeat until' block to continue action until outcome is reached (Studio Code)	Introduce 'if' block so computer can make 'decisions'
	Create an algorithm for a screen turtle (Textease Green level) to draw a square using repeat tool	Introduce changing angles to create various regular shapes	Predict outcome of code and explain why.
	Create an algorithm for a screen turtle (2go) to draw a square using 8 sectioned sequence	Create an algorithm for a screen turtle (2go) to draw a square using repeat tool	
Year 1	Add a sprite (and delete) and a background (Scratch Jr)	Select basic movements and add to programming area. (Scratch Jr)	Apply 'repeat' block to chosen movement. (Scratch Jr)
	Drag movement blocks to programming area (LightBot and Studio Code)	Apply 'repeat' block as an alternative to recurring steps (Studio Code)	
	Create a set of instructions for a screen turtle (2go)	Program screen turtle top draw a square	
	Work out a series of instructions for a floor robot to reach a target. (BeeBot)	Record instructions for others to follow.	Follow a set of instructions to reach a target.
	Use one or more instructions at a time to move a screen turtle. (2go)	Recognise mistakes within instructions and debug.	
FS2	Explain how the robot moved and why.	Input more than one instruction into a floor robot in order to reach a target. (BeeBot)	Be able to change instructions when they don't work.
	Understand instructions: forwards, backwards, turn.	Input one instruction at a time into a floor robot.(BeeBot)	Use 'right' and 'left' to select direction of turn.
	Understand and use vocabulary when sequencing: first, then, next		