Unit 6.2 iProgram – iDevelop

Background information for teachers

After learning the main programming skills in Levels 1-3 using the 'Blockly' language, the pupils will progress to learning 'Swift'. Through Swift they will learn how to manipulate written code. The course will then give the students the freedom to create a final project to demonstrate their abilities.

Learning Outcomes for the Unit

Over the course of iProgram Level 4 pupils will learn to code in JavaScript and create intricate programs that give the illusion of AI (Artificial Intelligence).

Key vocabulary

JavaScript	an object-oriented computer programming language commonly used to create interactive effects within web browsers.
Clone	In computer science, cloning refers to the making of an exact copy of an object.
Function	The function contains instructions used to create the output from its input.
Commands	In computing, a command is a directive to a computer program to perform a specific task.
Automation	Automation is the use of technology to accomplish a task with as little human interaction as possible.

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Learning Session 1	This lesson will start with a recap of previous iProgram levels looking at key elements of programming such as algorithms, conditionals, variables and sequences. The students will be reintroduced to the app Hopscotch and tasked with creating fireworks.
Learning Session 2	To introduce the basics of the Swift programming language. Using Swift Playgrounds to write basics commands building on the introduction to Swift in Level 2.
Learning Session 3	Continue to develop Swift skills. Introduce Functions into the Swift programming language along with writing loops. Checking that the correct syntax is being used.
Learning Session 4	Pupils will use the written coding language to program Sphero. Then create a simple logic game in Hopscotch. The Rock Paper Scissors game will allow introduction of basic logic switches and their use with conditionals. Learning about AND, NOT, MORE THAN and LESS THAN controls.
Learning Session 5	Move to working through the Rock Paper Scissors tutorial on Swift Playgrounds. The lesson will encourage them to compare the game they have been creating with its written programming counterpart. They will learn how to manipulate written language to manipulate the appearance of their game.
Learning Session 6	During this lesson pupils will learn how to code using logical operators in our programs. They will also use JavaScript to combat a series of obstacles with Sphero
Learning Session 7	This session will run either as part of a longer half term or a contingency for pupils or classes who have exceeded the lesson plans for the half term. The class will be asked to create a final project to show off their skills. The project can be any type of game or app they wish, to demonstrate as many skills as they can. Pupils will code in Blockly and move on the Java is capable.