Allanson Street Primary School – Medium Term Plan

Year group:	1 (Spring)	Subject:	Computing	Unit:	Coding – Moving Objects and Simple Inputs

National Curriculum Objectives	Concepts
I will learn to: • understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • create and debug simple programs use logical reasoning to predict the behaviour of simple programs	**Culture, Legacy, Economy, Equality, Climate, Justice, Invasion, Identity, Power, Revolution, Freedom, Civilisation, Sustainability, Democracy, Relationships**

Common Misconceptions

Some children may think: **The programs can be controlled by touching the monitor of the desktop computer and not use a mouse to move items.**

Prior Learning

EYFS	Children learn to follow instructions (Algorithms), spot pattens and sequence familiar tasks. Children learn to use a touch screen on ipads and how to select options on screen. Children learn to input simple commands to control a 'Beebot'.

Future Learning

Y2	Learn that programs respond to different sorts of inputs, and that the keyboard can be used to control objects on screen, not just by clicking them directly. Learn that one object can be used to control another object, e.g. writing code so clicking a button gives an instruction to make a lorry move.
Y3	Learn to make things happen in a sequence, creating simple animations and simulations. Learn to code with 'if statements', which select different pieces of code to execute depending on what happens to other objects.
Y4	Learn how computers use variables to count things and keep track of what is going on, then create simple games which use a score variable. Learn how computers use repetition and loops to do things over and over again.
Y5	Learn how computers use numbers to represent things such as how fast things are moving, and where they are. Learn how computers can generate random numbers and how these can be used in simulations.
Y6	Learn to use variables in more complex ways, and to manipulate inputs to create useful outputs. Learn more about how computers use property values and parameters to store information about objects.
KS3	Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem. use 2 or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions. understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]

Learning Objectives	Learning Sequence	Sticky knowledge / core skills & vocab.	End points & Assessment
Understand that when a computer does something, it is following instructions called 'code'	Espresso Coding Level 1 – On the move: Under the sea In this lesson, pupils will learn that when a computer does something, it is following instructions called 'code'. First, pupils will make individual objects move in different directions on the screen, and then they will write code to make several objects move at the same time, eventually building an animated underwater scene.	code, instructions, run, up, down, left, right, direction, object, action	ALL I can write code to make a fish move across the screen. MOST I can write code to make a jellyfish move in more than one direction on the screen. SOME I can decide the direction in which three sea creatures will move and write code to make this happen.
Use code to make objects move when they are clicked on.	Espresso Coding Level 1 – On the move: Transport on the go In this lesson, pupils will learn that code can be used to make an object carry out an action when it is clicked on and will use this to build an animated transport scene.	click event, code, action, object, click	ALL I can write code to make an object move when it is clicked on. MOST I can write code to make different objects move in different directions when they are clicked on. SOME I can explain how I programmed different objects to move in different directions when clicked on
Use code to write a computer program where objects in a space scene move when they are clicked on.	Espresso Coding Level 1 – On the move: Another Planet In this lesson, pupils will learn that giving a computer instructions in code is called 'programming'. They will consolidate their understanding that objects can be programmed to do an action when they are clicked on.	program, programming, code, action, object, click,	ALL I can write code to make a rocket move when clicked on. MOST I can use code to write a computer program where several objects move in different directions when clicked on. SOME I can explain the different parts of my program, and what the code in each part does.
Combine start events and click events to make a simple game.	Espresso Coding Level 1 – Simple Inputs: Burst the bubbles In this lesson, pupils make a game in which they make bubbles disappear by clicking on them as they float up the screen. They will learn that objects can be programmed to perform actions at the start or when they are clicked on.	code, object, action, click, start event, click event	ALL I can write code to make a bubble disappear when it is clicked on, or to make a bubble move when my program starts. MOST I can combine code to make a bubble move when my program starts and disappear when it is clicked on. SOME I can write code to make three bubbles move when my program starts and pop when they are clicked on.

Combine start events and click events to program cars and emergency vehicles in an animated traffic scene.	Espresso Coding Level 1 – Simple Inputs: Catch the fish In this lesson, pupils will consolidate understanding of start events and click events and combine these to create a fishing game.	click, start, click event, start event, code, object, action	ALL I can write code to make a fish move at the start and then disappear when it is clicked on. MOST I can write code to program three fish to move at the start and then disappear when they are clicked on. SOME I can explain how I have combined start events and click events to create my game.
Use coding knowledge to fix the age-related mistakes in a variety of programmes.	Espresso Coding Level 1 – Simple Inputs: Emergency Espresso Coding Level 1 – Debugging: Simple Inputs In this lesson, pupils will consolidate their understanding that start events and click events can be used together and use this to create an animated traffic scene. Pupils will then debug ready made program with set errors.	object, action, click, start, stop, code	ALL I can write code that includes start events and click events to control vehicles. MOST I can write code in which the same object responds to both click events and start events. I spot simple errors in ready made programs and fix them to make the code run properly. SOME I spot all errors in ready made programs and fix them to make the code run properly.