Medium term Plan for Computing

Year 4- Programming- Autumn 2

Further coding with Scratch

Hook: Brief- Children are to become game designers, designing a multiplication game to help children their age with their multiplication test. Children will be shown a variety of multiplication games, before designing their own.

Topic Outcome: Children will be able to identify variables and if statements in Scratch code, as well as create their own. They will be able to find errors in given code and debug code of their own creation

Topic Reflection: Children will create and debug their own game using variables and 'if/else' statements, evaluating their completed work. Children will contribute to class discussion around what improvements can be made.

Statutory requirements:

KS1 Statutory Requirements

- Understand what and algorithm is and how they are used.
- To create and debug simple programs.
- Use logical reasoning to predict the behaviour of simple programs.
- Use technology safely and respectfully

KS2 Statutory Requirements

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.
- Solve problems by decomposing them into smaller parts.
- Use sequence, selection, and repetition in programs
- Work with variables and various forms of input and output

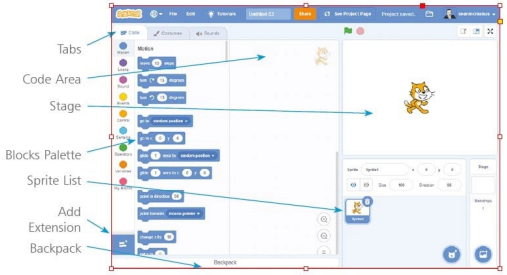
Vocabulary

Tier 1:

Sprite, if statement, variable, condition, if, then, else, debug, evaluate

Tier 2:

Decomposition, sensing, ask block, join block



Previous Skills

Children can Remix and change an existing program.
Children can Use repetition to make programs more efficient.
Children can Use forever loops in a program .

Previous Knowledge

Children know that we can break tasks down into smaller bits.
Children know that scratch is a block coding platform.

Previous Understanding

Children understanding that for code to work it must have a starting 'Event' block.
Children understand that an error in a code can affect the codes outcome.

Children can match inputs to outputs. Children know how to use word processing software.	Children know that all games and computing programmes are created using code.	Children know about cause and effect in everyday life. If I do this then this happens.

	Concept	Learning Objective	Lesson Outcome	Success criteria	Vocabulary
Lesson 1	Exploring variables and conditions	LO: To explore how variables and if statements are used in Scratch by identifying their purpose in a game.	Children will explore how variables and if statements work by playing and investigating a simple game.	I can find and explain how a variable is used in a Scratch project. I can identify an if statement in the code. I can describe what happens when a condition is true.	Condition, decomposition, if statement, Sprite, variable
Lesson 2	Using conditions and sensors	LO: To use conditions and sensors to control what happens in a Scratch game	Children will use conditions alongside sensors to create a short game.	I can use an if, then, else block to make the game respond differently when a condition is true or false. I can use a sensing block to check for something I can explain what my condition checks for and what each outcome does in the game.	If statement, if, then, else, sensing
Lesson 3	Planning a game.	LO: To create a variable to keep a score	Children will plan a game in Scratch to include variable and conditional statements.	I can create a variable to store a word or a number I can use a variable to keep track of the score in my game. I can build a working game that uses variables to respond to the user's input.	variable

Lesson 4	Programming a game.	LO: To combine variable, if statements and sensors to program a multiplication game.	Children combine variables, if statements and sensors to programme a multiplication game.	I can use the 'if/else' block to check whether an answer is correct. I can use the score variable to keep track of correct answers. I can personalise my game to make it fun and engaging for the player.	Ask block, if, then, else, join block, variable
Lesson 5	Evaluating a game.	LO: To debug and evaluate a game by identifying and fixing errors	Children will debug and evaluate a game	I can identify errors in the code I can recognise what each part of the code is meant to do and explain how the bug affected what my game did. I can reflect on how well my project works and how it could be improved.	Debug, evaluate
Endpoints:	Knowledge: I know that breaking down a problem into small parts makes it easier to solve I know loops are used to save time when writing code. I know a variable is a container or holder for storing information that can change. I know that conditional statements tell the computer what to do next based on a user's input. I know that it is important to identify mistakes in a programme as part of debugging. I know that errors in a program can result from sequencing errors, coding errors or missing code Skills: I can work towards a given goal that a programme needs to accomplish. I can break down a problem to make it more manageable.				

	I can tinker with existing code to see how it effects it. I can remix and add to existing code. I can create loops to make a code more efficient. I can use variables in block-based programmes. I can use conditional statements in block-based programming. I can recognise the relationship between what is happening in a program and what the code says. I can work backwards and break up code to identify errors and debug.