Medium Term Plan: Supporting Implementation of LTP/Progression Grid

Subject: Computing – Programming: Repetition in Games Year: LKS2 – Year B – Summer

NC/PoS:

- 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
- Use logical reasoning to explain how some simple algorithms work, and to detect and correct errors in algorithms and programs
- Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information

Prior Learning (what pupils already know and can do)
Understanding giving and following instructions, using floor robots to create and debug programs, creating a sequence of commands to follow a routed, using Scratch Jnr to create a program using blocks, how to add music and link to motion, how to use the pen tool within programmes, how to use repeat and create count-controlled loops, how to create a programme in a text-based language

End Points (what pupils MUST know and remember)

- To develop the use of count-controlled loops in a difference programming environment
- To explain that in programming there are infinite loops and count-controlled loops
- To develop a design that includes two or more loops which run at the same time
- To modify an infinite loop in a given program
- To design and create a project that includes repetition

Key Vocabulary
Scratch, programming, sprite, blocks, code, loop, repeat, value, forever, infinite loop, count-controlled loop, costume,

Recommended Resources:
https://tinyurl.com/lks2-repetitioningames

Session 1: Different loops

Review previous unit; how is repetition used to create shapes? What is a count-controlled loop and how can they impact the shape drawn in the programme? Can we predict what the outcome will be from a given piece of code and can this code be used to create new shapes through modification?
What is an infinite loop? Would its purpose differ from that of count-controlled loop? Why?

Vocabulary: Scratch, programming, sprite, blocks, code, loop, repeat, value

Session 2: Repetition in animation

How can we adapted a programme using repetition to create shapes, to create an animation for our name? Can multiple sprites be used to create the letters at the same time? How can the appearance of the sprites be changed? How can we ensure all sprites start at the same time? Once complete, can we evaluate our work and make suggested improvements?

Vocabulary: Block, repeat, forever, infinite loop, count-controlled loop, costume

Session 3: Designing a Game

Using existing an existing game, how can we change the sprite to better suit the environment? How can we modify the code blocks within loops to make changes? Can we use the model project to create our own game? How can we ensure that the background/sprite/objects match? What loops will need to be used? How can we make our game interactive? How can we refine our algorithms? How will we know we have been successful?

Vocabulary: Block, repeat, forever, infinite loop, count-controlled loop, costume
Future learning this content supports: The content of this unit will support other units on using loops with programmes, and designing and create an end product.