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| **Term Pentecost 2**  **Subject: Computing Year 4 Medium Term Planning** | | | | | | |
| **National Curriculum Objectives**  ● 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 | | | | | | |
|  | Lesson 1 | Lesson 2 | Lesson 3 | Lesson 4 | Lesson 5 | Lesson 6 |
| **Learning intention for each lesson:** | I know how to develop the use of count-controlled loops in a different programming environment | I know how to explain that in programming there are infinite loops and count-controlled loop. | I know how to develop a design that includes two or more loops which run at the same time | I know how to modify an infinite loop in a given program | I know how to design a project that includes repetition | I know how to create a project that includes repetition |
| **Recall and retrieval** | *.*Scratch, programming, sprite, blocks, code, loop, repeat, value, Infinite loop, count-controlled loop, repetition, design, sprite, algorithm, infinite | Predict outcome of a snippet of code. | How many loops will this program create. | Is the repeated sequence effective? | What will happen to the sprite if I change an element? | What will my sprite do? |
| **Sequence of knowledge throughout the lesson**  **:**  **Key skills within each lesson** | **Key knowledge**  To list an everyday task as a set of instructions including repetition  To predict the outcome of a snippet of code  To modify a snippet of code to create a given outcome  **Use Scratch to create shapes using count-controlled loops.**  **Use existing code to modify and create new code.** | **Key knowledge**  To modify loops to produce a given outcome  To choose when to use a count-controlled and an infinite loop  To recognise that some programming languages enable more than one process to be run at once  **Identify different types of loops: Practise using loops**  **in scratch.** | **Key knowledge**  To choose which action will be repeated for each object  To explain what the outcome of the repeated action should be  To evaluate the effectiveness of the repeated sequences used in my program  **Use animation to change the costume of the sprite.**  **design an animations, Program the animation in Scratch.**  **Evaluate their work.** | **Key knowledge**  To identify which parts of a loop can be changed  To explain the effect of my changes  To re-use existing code snippets on new sprites  **Improve existing game to match the design.**  **Implement changes on scratch program.** | **Key knowledge**  To evaluate the use of repetition in a project  To select key parts of a given project to use in my own design  To develop my own design explaining what my project will do  **Design a game based on the model project, Design algorithms for sprites in the game.**  **To test and make changes to the design.** | **Key knowledge**  **To**  refine the algorithm in my design  To build a program that follows my design  To evaluate the steps I followed when building my project  **Build games, using the designs.**  **Refine designs in and fix any problems.**  **Evaluate work.**  **Demonstrate the finished game.** |
| **Scaffolding** | Create simple count controlled loops. | Use just one type of loop. | Fewer letters to animate. | Support for making changes on scratch program. | Support for identifying changes. | Simple game and support for fixing issues. |
| **Challenge** | Predict outcome of codes. | Identify different purposes for the loops. | First and second name to animate. | Explain reasons for changes. | More complex design. | More complex algorithms. |
|  | **Key Vocabulary**  Scratch, programming, sprite, blocks, code, loop, repeat, value | **Key Vocabulary**  Block, repeat, forever, infinite loop, count-controlled loop, costume | **Key Vocabulary**  Repetition, forever, infinite loop, count-controlled loop, animate, costume, event block, duplicate | **Key Vocabulary**  Block, repeat, forever, infinite loop, modify, design | **Key Vocabulary**  Infinite loop, count-controlled loop, repetition, design, sprite, algorithm | **Key Vocabulary**  Repetition, design, algorithm, duplicate, debug, refine, evaluate |