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| **Term Pentecost 2:Programming B – Events and actions in programs**  **Subject Computing Year 3 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:** | To explain how a sprite moves in an existing project | To create a program to move a sprite in four directions | To adapt a program to a new context | To develop my program by adding features | To identify and fix bugs in a program | To design and create a maze-based challenge |
| **Recall and retrieval** | Motion, event, sprite, algorithm, logic, pen, resize, action | How can you improve this program? | Which of these characters is suitable for the maze and why? | What is silly about this design and how can it be improved? | What are these additional features? | Match the codes to the outcomes. |
| **Sequence of knowledge throughout the lesson**  **Key skills within each lesson** | **Key knowledge**  I know how to explain the relationship between an event and an action  I know how tp choose which keys to use for actions and explain my choices  I know how to identify a way to improve a program  **To know through investigation which keys perform which function.**  **To know how to use knowledge of programming to improve a program.** | **Key knowledge**  I know how to choose a character for my project  I know how choose a suitable size for a character in a maze  I know how to program movement  **To know how to select various sprites and select an appropriate sprite which will go through a maze** | **Key knowledge**  I know how to use a programming extension  I know how to consider the real world when making design choices  I know how to choose blocks to set up my program  **To know how to use the four directions.**  **To know how to change the size and shape of the sprite.**  **To create and duplicate directional movement.** | **Key knowledge**  I know how to identify additional features (from a given set of blocks)  I know how to choose suitable keys to turn on additional features  I know how to build more sequences of commands to make my design work  **To begin to know how to use pen blocks.**  **To predict and explore new blocks.**  **To add new blocks to their projects.**  **To test the effectiveness of the new blocks.** | **Key knowledge**  I know how to test a program against a given design  I know how to match a piece of code to an outcome  I know how to modify a program using a design  **To know how to review an existing project against a given design**  **To know how to identify bugs within it. To know how to correct errors, To begin to develop projects by considering which new setup blocks to use.** | **Key knowledge**  I know how to make design choices and justify them  I know how to implement my design  I know how to evaluate my project  **To know how to design and create a project. To know how to Use a template.**  **To know how to move a sprite around a maze.** |
| **Scaffolding** | Specific questions to support improvement. | Support to choose a sprite. | Support questions to guide the sprite through the maze. | simple commands | Simple program | Partially completed template. |
| **Challenge** | more complex improvements. | Select various sprites and investigate if they can go through the maze. | Extend and prove the sprite can move through the maze. | more complex commands. | More complex program | Blank template. |
|  | **Key Vocabulary**  Motion, event, sprite, algorithm, logic | **Key Vocabulary**  Move, resize, algorithm | **Key Vocabulary**  Extension block, pen up, set up | **Key Vocabulary**  Pen, design, event, action, algorithm | **Key Vocabulary**  Debugging, errors, setup | **Key Vocabulary**  Design, code, setup, test, debug, actions, events |