



Computing

Year 3 & 4

Cycle B Term 3

Programming & Control: mazes

Key Question: How can coding be used to create and complete a maze challenge?

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

Vocabulary

Motion, event, sprite, algorithm, logic
 Move, resize, algorithm
 Extension block, Pen, pen up, set up, design, action,
 Debugging, debug, errors, setup
 Code, test,

Prior Learning:

- In KS1 they used Scratch Junior to create sequences.
- In term 1 the children completed their first programming and control unit using Scratch. They were introduced to the Scratch programming environment. They began to use motion, event and sound blocks to create simple sequences. They used this knowledge to create a representation of a piano.

End Point:

The children will design and control their own maze tracing program using Scratch.

 Use assessment rubric

Safe and Responsible Use:

use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Digital Literacy Skills:

Use a mouse/trackpad and keyboard to confidently navigate.
 Follow hyperlinks
 open, resize, reorganise and close windows Create work for a range of purposes

Knowledge:

I know:

- how a sprite moves and how that a keyboard and/or mouse can be used as an input.
- That a sprite can be controlled to move in different directions.
- That the pen extension blocks can be used to create lines.
- That debugging is the process of fixing errors.
- How to identify 'bugs' in a program.

Skills:

I can:

- Explore and explain the relationship between an event and an action
- choose which keys to use for actions and explain my choices
- Make improvements to existing project
- Adjust sizes of sprites to ensure they are appropriate.
- Choose blocks to program movement.
- Use programming extensions (pen blocks)
- Choose suitable keys to turn on additional features
- build sequences of commands to make a design work
- identify and fix bugs in a program
- Create a design and implement it
- Evaluate my project

Cross Curricular Links:

Maths - position and direction, ratio and proportion.

Oracy:

Talk through problems when debugging errors.

Key Questions:

- How can you give credit for other people's work?
- What inputs can be used to control a sprite?
- How can I create a program to move a sprite in four directions?
- How can a program a spite to draw lines?
- How can I change the lines I draw?
- How do I identify and fix bugs in a program?
- How can coding be used to create and complete a maze challenge?