

Year 3 Programming

Prior Learning (Y2):

Develops pupils' understanding of instructions in sequences and the use of logical reasoning to predict outcomes. Pupils will use given commands in different orders to investigate how the order affects the outcome. Pupils will also learn about design in programming. They will develop artwork and test it for use in a program. They will design algorithms and then test those algorithms as programs and debug them

Key Vocabulary

Vocabulary to use from KS1: Algorithm, program, command, debug, logical reasoning

Sequence

A pattern or process in which one thing follows another

Key Unit Specific Vocabulary:

Scratch; Sprite; Four directions; Move; Up; Down; Left; Right; Pen; Erase; Colour

Key Questions:

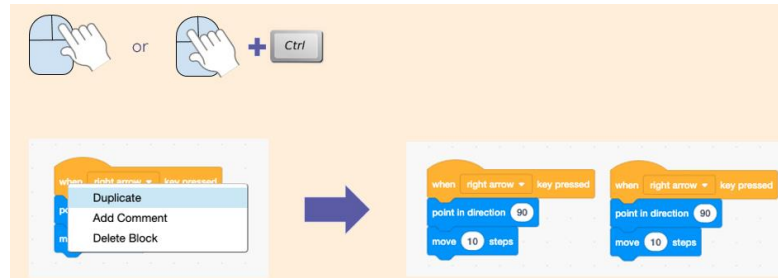
- How does a sprite move in an existing project?
- How can I create a program to move a sprite in four directions?
- How can I adapt a program to a new context?
- Why is setup important?
- How to identify and fix bugs in a program?

Current Learning (Y3):

This unit explores the links between events and actions. Learners begin by moving a sprite in four directions (up, down, left, and right). They then explore movement within the context of a maze, using design to choose an appropriately sized sprite. This unit also introduces programming extensions, through the use of Pen blocks. Learners are given the opportunity to draw lines with sprites and change the size and colour of lines. The unit concludes with learners designing and coding their own maze-tracing program.

Duplicating Code

To help save time, we can duplicate code by pressing **Right Click** or **Ctrl + Click**. Once the code is duplicated, we can modify it.



Debugging a program

Here are 5 steps to effective debugging:

1. **Review the task**- what should the project do?
2. **Test the project**
3. **Identify the bug**
4. **Fix the bug**
5. **Test the bug fix**- does the code now do what it should?

Future Learning (Y4):

Learners will explore the concept of repetition in programming using the Scratch environment. Learners look at the difference between count-controlled and infinite loops, and use their knowledge to modify existing animations and games using repetition. Their final project is to design and create a game which uses repetition, applying stages of programming design throughout.

Scratch – Extension Blocks



Pen Down Block



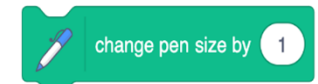
Erase Block



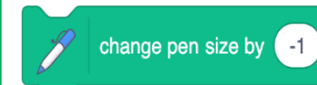
Pen Up Block



Set Pen Colour to Block



Change pen size by 1 Block



Change pen size by -1 Block