

Prior Learning (Y3):

Learners will be introduced to a selection of motion, sound, and event blocks which they will use to create their own programs, featuring sequences. The final project is to make a representation of a piano. The unit is paced to focus on all aspects of sequences, and make sure that knowledge is built in a structured manner. Learners also apply stages of program design through this unit.

Year 4 Programming

Current Learning (Y4):

Learners will create programs by planning, modifying, and testing commands to create shapes and patterns. They will use Logo, a text-based programming language.

Future Learning (Y5):

Learners will be introduced to a microcontroller (Crumble controller) and learn how to connect and program it to control components. Learners will be introduced to conditions as a means of controlling the flow of actions in a program. Learners will make use of their knowledge of repetition and conditions when introduced to the concept of selection (through the 'if...then...' structure) and write algorithms and programs that utilise this concept. Throughout this unit, learners will apply the stages of programming design.

Key Vocabulary

Vocabulary to use from KS1 and Y3: Algorithm, program, command, debug, logical reasoning, sequence

Repetition	Repeating the execution of certain instructions (creating loops)
Decompose	Breaking down a program into smaller parts that are more manageable and easier to understand.
Count-controlled Loops	When the number of repetitions to occur is already known
Infinite Loops	A sequence of instructions that, as written, will continue endlessly

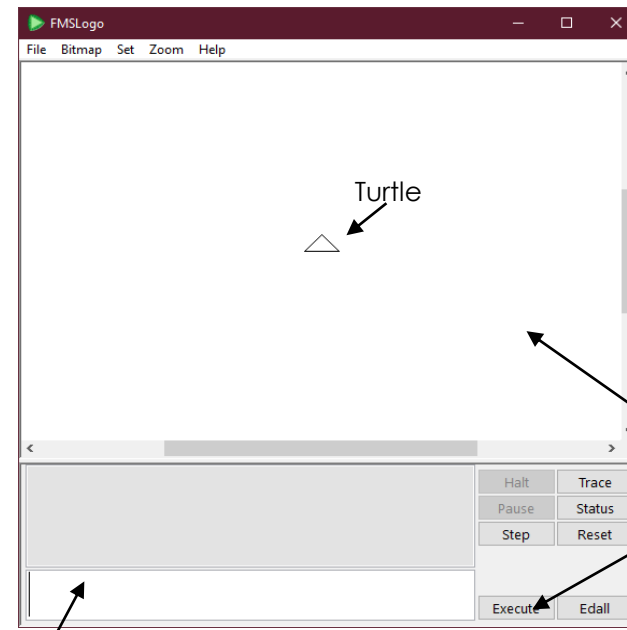
Key Unit Specific Vocabulary:

Logo; Forwards; Backwards; Right; Left; 90 degrees; Value;

Key Questions:

- Why is accuracy important in programming?
- How to create a program in text-based language?
- How can I use a count-controlled loop to produce a given outcome?
- How can I modify a count-controlled loop to produce a given outcome?
- How to decompose a task into small steps?

Logo



Command Box

Drawing Box

Run your commands by clicking here

Basic Commands in Logo

- FD 100** – Forward 100 (moves forward 100 steps)
- BK 100** – Back 100 (moves backward 100 steps)
- RT 90** – Right 90 (Turn right 90 degrees)
- LT 90** – Left 90 (Turn left 90 degrees)
- CS**- Clear Screen
- PU**- Pen Up
- PD**- Pen Down

Count-Controlled Loops

We can use count-controlled loops to repeat a particular code. With a count-controlled loop, we can repeat a code a set number of times.

Decomposition in Programming

When we think about what we need to program, we can also decompose our task into smaller parts. For example, when planning how to draw a hexagon, we can break it down into these parts:

1. Clear the screen
2. Go forward 100
3. Turn right 60 degrees
4. Repeat steps 2 and 3 six times

