



Computing

Year 3 & 4

Cycle B Term 4

Programming & Control: Logo

Key Question: How can repetition in Logo be used to create shapes and patterns?

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

Vocabulary

- Turtle — an arrow or turtle image on screen that draws a line as it is programmed
 - Code snippet — this could be the same as a program; it can have several sets of commands in one program
 - Algorithm — the part of the design of the program that is precise instructions to be implemented as code
 - Debug — the process of finding and correcting errors in your code
 - Decompose — break something down into smaller parts
 - Procedure — a named code snippet that can be run multiple times
 - Program — the entire solution to the task, and an implementation of the algorithm as code
- Commands, pattern, repeat, repetition, count-controlled loop, algorithm, value.

Prior Learning:

- From all previous programming units the children understand an algorithm as a series of commands. They understand that a value can be added to a command to show the value.
- In Y3 T6 the children have begun to use pen down and pen up to draw on Scratch.
- In Year 1 the children used some logo commands to travel through mazes.

End Point:

Children will design and create wrapping paper using more than one shape, which they will create with a program that uses count-controlled loops.

Use end of unit quiz.

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 the keyboard to type letters and numbers.
- Use brackets
- Use a range of software for programming

Knowledge:

I know:

- that accuracy in programming is important
- the effect of changing a value of a command
- what the words 'repeat' and 'repetition' mean.
- that a loop command can be used in a program to repeat instructions
- that in programming there are count-controlled loops
- that you can program a loop to stop after a specific number of times
- when to use a loop and when not to
- the importance of instruction order in a loop

Skills:

I can:

- program a computer by typing commands using a text-based language
- create a code snippet for a given purpose
- write an algorithm to produce a given outcome
- test my algorithm in a text-based language
- identify patterns in a sequence
- identify a loop within a program
- use a count-controlled loop to produce a given outcome
- plan a program that includes appropriate loops to produce a given outcome
- develop my program by debugging it

Cross Curricular Links:

Mathematics - angles

Oracy:

Provide sentence stems for debugging and evaluation. Work in pairs to produce and implement designs.

Key Questions:

- How can a strong password help protect your privacy?
- What is Logo?
- How are algorithms written in Logo?
- What is the repeat command and how is it useful?
- What are count-controlled loops?
- What are procedures in Logo and how can they be used?
- How can Logo be used to create patterns?