

Bomere and the XI Towns Federation Knowledge Organiser—SUBJECT

Topic: Programming A – Repetition in shapes

Class/Year Groups: Stiperstones

Term: Spring

What you already know?

This unit progresses students' knowledge and understanding of programming. It progresses from the sequence of commands in a program to using count-controlled loops. Pupils will create algorithms and then implement those algorithms as code.

What you will learn:

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

- Identify that accuracy in programming is important
- Create a program in a text-based language
- Explain what 'repeat' means
- Modify a count-controlled loop to produce a given outcome
- Decompose a task into small steps
- Create a program that uses count-controlled loops to produce a given outcome

Vocabulary:

Program - a set of ordered commands that can be run by a computer to complete a task

Turtle - an arrow or turtle image on screen that draws a line as it is programmed

Commands - a single instruction that can be used in a program to control a computer

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

Count-controlled loop - used to make a computer do the same thing a specific number of times

Decompose - break something down into smaller parts

Procedure - a named code snippet that can be run multiple times



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

