



Computing

Programming B – Repetition in Games

Year 4

Summer 2

Key Knowledge

To develop the use of count-controlled loops in a different programming environment	<ul style="list-style-type: none"> - I can list an everyday task as a set of instructions including repetition - I can modify a snippet of code to create a given outcome - I can predict the outcome of a snippet of code
To explain that in programming there are infinite loops and count controlled loops	<ul style="list-style-type: none"> - I can choose when to use a count-controlled and an infinite loop - I can modify loops to produce a given outcome - I can recognise that some programming languages enable more than one process to be run at once
To develop a design that includes two or more loops which run at the same time	<ul style="list-style-type: none"> - I can choose which action will be repeated for each object - I can evaluate the effectiveness of the repeated sequences used in my program - I can explain what the outcome of the repeated action should be
To modify an infinite loop in a given program	<ul style="list-style-type: none"> - I can explain the effect of my changes - I can identify which parts of a loop can be changed - I can re-use existing code snippets on new sprites
To design a project that includes repetition	<ul style="list-style-type: none"> - I can develop my own design explaining what my project will do - I can evaluate the use of repetition in a project - I can select key parts of a given project to use in my own design
To create a project that includes repetition	<ul style="list-style-type: none"> - I can build a program that follows my design - I can evaluate the steps I followed when building my project - I can refine the algorithm in my design

Statutory requirements

- 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"

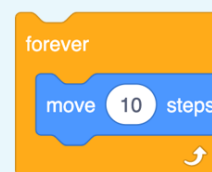
Key vocabulary

Spelling	Definition
Command	Similar to an instruction , a command is given by the user to the computer, telling it to do something.
Count Controlled Loop	A command that repeatedly runs a defined section of code a predefined number of times
Infinite Loop	A command that repeatedly runs a defined section of code indefinitely
Repetition	Part of a program where one or more commands are run multiple times in a loop
Modify	To make a change to something
Debug	When we debug, we find the problem in a code and fix it by removing or changing it.

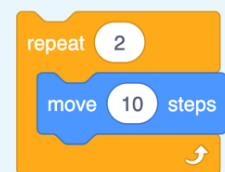
Possible experiences

- Hop on the train to the Science museum and take part in an exciting after school coding club! You can find out more by following this link; [After School Courses | Science Museum](#)
- Explore a variety of coding platforms and apply your knowledge by designing your own project on these. You can find out more here: [CoderDojo useful links | Science Museum](#)
- Try out a project on scratch where you include count controlled loops. Save this and get a family member to test it for you. Debug it where necessary.

Different kinds of repetition



Infinite loop



Count-controlled loop