



Year 7—Scratch Programming Knowledge Organiser



What

This unit is about programming using Scratch. You will learn some of the Key Programming constructs used by programmers.

The main programming concepts covered in this unit are sequencing, variables, selection, and count-controlled iteration

Why?

Knowing about coding is the first step to building software and how we make computers work. Every time you use the phone in your pocket or your car tells you how much fuel you are using a computer program is running that someone has programmed. More programmers will be needed in the future. Could it be you?

Previous Learning

You may have used Scratch before in Primary school to program something? You should have learnt about sequencing and Algorithms in your previous school.

You may have looked at how programs can solve problems and how to break a problem down to simpler parts.

Key Words

Data
Variable
Program
Script
Iteration
Sequence
Conditional
Algorithm
Operator
Boolean

Where next... This unit will lead onto further programming opportunities using scripts instead of blocks. You will be using the same constructs but learn a different programming language. You should see that each block can be represented by a line of code in another language! If you want to start early look at www.codecademy.com. You will learn Python, Visual Basic and some Javascript

Key Skill

Programs using sequencing to put instructions in order.

If we want to make a choice about which line of code you may use if statements.

Known as **Conditionals**.

Only one of the lines of codes will happen but not both

Key Skill

Using a repeat in the code saves us having to write out code multiple times.

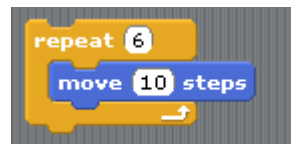
This can be known as loops or **Iteration**

Key Skill

If we want **data** in our program we use a **variable (in orange)**. For example to keep score in a game.

Key Skill

An **operator** ($> < =$) can be used to compare data in a program or to change data. They can do mathematical expressions.



Combining these concepts together is how we develop games and other software.

Learn more about Scratch software here:

<https://scratch.mit.edu/>

Links with other subjects

Maths—using operators, repeating a number of steps etc.—all require you to understand basic maths.

DT—designing your own game, creating backgrounds and sprites all relate to DT