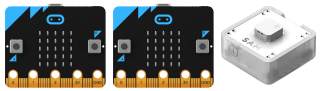
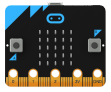
Year 9 (Ages 13–14) Overview

Learn to Code

Lesson Number **Lesson Name** **Key Computing Focus**	**Blocks**	**Lesson Overview**
Lesson 1 **No Place To Hide** KS3 Computing: Textual Based Code		During this lesson, students will gain an understanding of how textual programming can be developed. They will integrate and exhibit learning by helping Sam create a program in block-based coding and compare it to the programming languages of Python and JavaScript.
Lesson 2 **Phishing Expedition** KS3 Computing: Digital Literacy – Online Safety: Phishing		During this lesson, students will gain an understanding of what phishing is, the associated risks and how to identify a phishing email. They will integrate and exhibit learning by helping Sam create a program that alerts her when she has received a phishing email and when her personal data has been cloned.
Lesson 3 **Time Loop** KS3 Computing: Nested Loops		During this lesson, students will gain an understanding of what a nested loop is and how to use it effectively within a program. They will integrate and exhibit learning by helping Sam create a program that represents a time loop and utilises a nested loop to represent escaping.
Lesson 4 **Double Check** KS3 Computing: Binary Addition		During this lesson, students will gain an understanding of how to add two binary numbers together. They will integrate and exhibit learning by helping Sam create a program that converts binary numbers to denary as a way of double checking the answer of a binary addition.
Lesson 5 **Hidden Number** KS3 Computing: Negation		During this lesson, students will gain an understanding of negation and its use in programming. They will integrate and exhibit learning by helping Sam create a program that guesses a hidden number.

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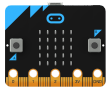
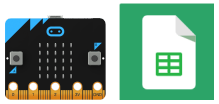
Lesson 6 **Encrypt and Decrypt** KS3 Computing: Digital Literacy – Encryption Methods		During this lesson, students will gain an understanding of methods of encryption, focusing on the Caesar Cipher. They will integrate and exhibit learning by helping Sam create a program that encrypts and decrypts given text, demonstrating the Caesar Cipher.
Lesson 7 **Pixels** KS3 Computing: Binary Images		During this lesson, students will gain an understanding of how digital images are made up of pixels and can be represented using binary. They will integrate and exhibit learning by helping Sam create a program that links a spreadsheet to Workbench in order to output a binary image on the micro:bit display.
Lesson 8 **Search and Locate** KS3 Computing: Searching Algorithms		During this lesson, students will gain an understanding of searching algorithms; linear and binary. They will integrate and exhibit learning by helping Sam create programs that demonstrate binary and linear searching algorithms.
Lesson 9 **Sorted** KS3 Computing: Sorting Algorithms		During this lesson, students will gain an understanding of two types of sorting algorithms; insertion sort and bubble sort. They will integrate and exhibit learning by helping Sam create a program that demonstrates a bubble sort on given data.
Lesson 10 **Catch and Destroy** KS3 Computing: Information Technology – Crowdsourcing		During this lesson, students will gain an understanding of what crowdsourcing is and how it can enhance the working environment. They will integrate and exhibit learning by helping Sam create a program that captures and defeats the evil villain M.A.S. once and for all. Discussing development of the program as a class will demonstrate crowdsourcing.

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