

Lesson Plan. Mr Mapstone. 12th March 2021

13:30 - 14:00

Year 10. 9 boys - 2 EAL, 1 dyslexia, 1 mobility issues.

Key concepts by which to assess learning:

- Derive a general algorithm for a given problem
- Understand how algorithms affect us, their scope, citing personal interaction
- Understand difference and uses of block vs text based coding
- Apply block-based coding to solve simple problems that require commands, sequence, selection and iteration.

1. Backpack problem 7- 8 minutes - aim to solve but more importantly explain how, illicit the method used to solve. Develop a general purpose algorithm for this problem, An introduction to modelling the concepts of sequence, selection and iteration. Students solve in pairs or small groups - individually if not possible.

2. Introduction to Computer Science and its scope 7- 8 minutes

- a. At its heart computational thinking to problem solve, an advancement in human tools - The car as a network, farming etc.
- b. Ubiquitous nature of algorithms - range of examples small and global
- c. Talk through examples of algorithms using presentation
- d. Question students on their perceived interaction

3. Block vs text based coding 10 minutes

- a. Block allows focus on the algorithm - abstracts some detail in implementation
- b. Intro key terminology
- c. Students go to blockly games maze (web) and aim to complete all 10 levels (challenge)
 - i. Circulate if appropriate, questioning, assisting
 - ii. As progressing point out command, sequence, selection and iteration
 - iii. Point out term bug - feature, behaviour unintended.

4. Wash-up 3 minutes

- a. 4 points to leave students with.
- b. Any questions?

5. Extension

- a. Students writing one or more functions in python using repl.it - using example scaffolding given