

Computer Science

The OCR A Level Computer Science course is designed to further expand on topics covered in the GCSE. If you have not studied OCR GCSE Computer Science you are strongly advised to purchase *OCR GCSE (9-1) Computer Science* by PG Online and work your way through it before you start in September. You must also complete the tasks outlined below before September 2021. Everyone should purchase *OCR AS and A Level Computer Science* by PG Online ready for the course.

Essential preparation

Students are expected to be familiar with the topics covered on the OCR A Level Computer Science Course. This information, as well as exemplar papers and NEA materials, can be found at: <https://www.ocr.org.uk/qualifications/as-and-a-level/computer-science-h046-h446-from-2015/specification-at-a-glance/>

Recommended reading

- Trigger Happy: The inner life of videogames by Stephen Poole
- The Soul of a New Machine by Tracy Kidder
- Hackers: Heroes of the Computer Revolution by Steven Levy
- Code: The Hidden Language of Computer Hardware and Software by Charles Petzold
- Computational Thinking by Jeannette Wing
- The new Turing omnibus by A Kee Dewdney
- <https://www.tnmoc.org/>
- <http://pcpro.com/>
- <https://www.theregister.co.uk/>

Recommended preparation

- **Educational visit**
During the holidays we would like you to visit Bletchley park (<https://bletchleypark.org.uk/visit-us>) to "explore, experience and enjoy the once top-secret world of iconic Codebreaking..." Admission prices range from £11.85 to £19.95 (if booked online).
- **Programming**
The programming project contributes to 20% of the qualification. It will be highly advantageous to start the course with your coding skills above 'beginner level'. Below are some useful websites you can choose from to develop your coding skills. Develop your coding skills in Python and another programming language.

Python lecture videos	http://www.pythonbytesize.com/
Python e-books	https://pythonbooks.revolunet.com/
Coding tutorial websites	https://www.codecademy.com/ http://www.programmr.com/ https://www.learnpython.org/

Task(s) to be completed over Summer

(1) Coding challenges

Work your way through the coding challenges booklet found on:

<https://www.ocr.org.uk/Images/260930-coding-challenges-booklet.pdf>

Save each code you write successfully using the task as the file name. Save all your programs on a memory stick and bring to your first Computer Science lesson in September.

(2) Computational thinking workbook

Work your way through the workbook (Computational Thinking Workbook.docx) inside the Resources folder, following instructions to go through the PowerPoints first. There is a Mark Scheme you can use to check your work. The Resources folder contains everything you need to successfully complete the workbook.

(3) Keywords Flashcards

Open the folder called **A Level Key Terminology**.

On each slide of the PowerPoint (*A Level Key Terminology.pptx*) is a keyword that you need to know. Make some flashcards out of the PowerPoint to help you with your revision later. You may use the blank student version or create your own flashcards however you wish.

**Please note that we do not offer A Level Computer Science at The Misbourne. However, we hope you find these resources useful if you plan to study the course elsewhere.*