

Step up to A-Level Computer Science

This is a menu of tasks to help you get ready to study Computer Science at A-Level. Try to choose a 'balanced diet' of activities each week to ensure variety in your learning. Keep your completed work organised in a folder so that you can submit your transition work during your first Computer Science lesson.



Short Video Clips (less than 10 minutes)

Each of these clips offers context for the course. Write down any key details they reveal or inferences you can make from them. List questions the clips raise that you would like to understand more about (aim for 3)?

What is Hashing?

<https://youtu.be/xeVTtP5fTIY?si=iIXkhDFoteQgF72l>



What is Pipelining?

<https://youtu.be/Pk8gpJEWFRc?si=jx4leBanKo6P8yzM>



Simplifying Boolean Expressions

<https://youtu.be/b0i45HRXMds?si=vJ4spygCP7c1O1x0>



Longer Video Clips, Films or Documentaries

These videos will get you thinking even more about Computer Science issues. Select one video, record the key points of context or information that you found significant, alongside 5 subsequent questions that the video has spawned.

Kurzgesant

<https://www.youtube.com/watch?v=JhHMJCUmq28>



A-Level paper walkthrough

https://youtu.be/nMTPlzXqhys?si=k_m8mjhPWl2Ol-Ady



Programmes and Podcasts

There is a huge array of Computer Science radio programmes and podcasts available. If you do not have a podcast app, or cannot sign in to BBC Sounds, this would be your first thing to remedy. Below are a few stretching and informative programmes for you to enjoy. Make notes on ½ page of A4 about what you have learnt about the topic of each programme and which opinions you agree with and why.

Click

<https://www.bbc.co.uk/programmes/b006m9ry>



Ex Machina (film 2015)



Questions to Consider

The questions below are designed to get you thinking more broadly about some of the underlying issues within the course we study in Year 12. Choose a question and try discussing it with somebody else. Then write 500 words exploring different possible responses and explaining your own opinions.

How will computing affect the future of finance?

What role will AI play in the future?

What effect will Quantum computing have?



Debate

Task: Read the linked page regarding impacts of computer science and complete the activities below.

<https://techwithtech.com/computer-science-controversial-topics/>



EST: 1629

Will AI lead to job losses?

How has Privacy been affected by computing?

Why is mining so controversial?



Books and Other Longer Reads

These books are excellent introductions to the themes we study in Computer Science. They are available to buy and download as e-books, some of them are free!

**OCR A-Level Computer
Science H446**
PG Online

The Search
John Battele, 2006

**Social Engineering: the Science
of Human Hacking**
Christopher Hadnagy, 2018

