

BRIDGING THE GAP COMPUTER SCIENCE



Course Title	Examination Board & Web Address
A-Level Computer Science	AQA https://www.aqa.org.uk/subjects/computer-science-and-it/as-and-a-level/computer-science-7516-7517

Units/Topics Studied:

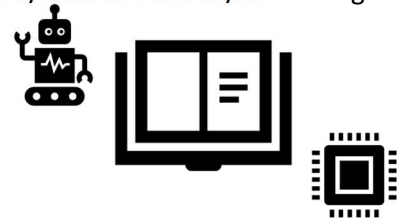
Fundamentals of programming, data structures, algorithms, data representation, computer systems, computer organisation and architecture, databases, communication and networking, functional programming, big data, consequences of using computing and theory of computation.

Bridging Task

Part One:

Carry out some research into the following topics. Use the Cornell notes system to record your findings:

- History of the internet
- The impact of Computing on Society
- Why are there so many programming languages?
- The history of artificial intelligence
- What is robotics?
- How does the CPU work?
- The impact of Computing in one of the following areas: medicine, design, engineering, manufacturing, retail, air traffic control, media or gaming.







Here is a link to some information about Cornell note taking if you have not used this method before:

[Cornell note taking – Craig 'n' Dave | Students \(craigndave.org\)](http://craigndave.org)

Part Two:

Try out the following challenges:

<p>How many days have you been alive? </p> <p>Create a program that would allow anybody to enter their birth date and correctly calculate the number of days they have been alive. The user should be able to enter their date of birth.</p>	<p>Computing Timeline </p> <p>Create a timeline showing the history of computing, including any key discoveries or inventions. Extend you timeline to show how you think computer science might develop over the next 50 years. <i>Reference any sources that you use to help you.</i></p>
<p>Customer ID Generator </p> <p>Create a program that asks the user to input:</p> <ul style="list-style-type: none"> • Their first name • Their last name • A date of their choice in the format DD/MM/YYYY <p>Your program should then output a customer ID using the date in the format YYYYMMDD, the first three letters of the surname, the first name and then the length of the first name. All letters should be in capitals. e.g. John Smith, 27/05/2017 would give 20170527SMITHJ4</p>	<p>Binary Conversion Program </p> <p>Create a program that will convert a binary number to decimal. The user should be able to enter a binary number and then be provided with the decimal equivalent. <i>Can you also allow your program to convert from decimal to Binary?</i></p>