



An Introduction to A Level Computer Science

Welcome to A Level Computer Science, we are delighted that you are considering studying this with us at MCA⁶.

This pack contains some activities to help you prepare for studying Computer Science in September.

If you have any questions or issues, please contact Mr Sexton (martin.sexton@mca.atrust.org.uk).

Isaac Computer Science

Isaac Computer Science is an online resource which you can use to study the A Level Computer Science specification.

You will need to create an account. You should use your MCA school email address where possible. Each link covers a different topic that is required at A Level. These will have been studied if you have been studying Computer Science at GCSE and will help you to develop your understanding of these topics.

https://isaacomputerscience.org/topics/gcse_programming_concepts

https://isaacomputerscience.org/topics/gcse_data_representation

https://isaacomputerscience.org/topics/gcse_boolean_logic

https://isaacomputerscience.org/topics/gcse_systems

https://isaacomputerscience.org/topics/gcse_networking

There are also lots of other resources for A Level Computer Science that you are more than welcome to look at and use. We will be studying the OCR specification.

Programming project

In September, you will be starting to complete your programming project. This is worth 20% of your final grade and will take you around 6 months to complete. This is a chance to show off your programming skills and design a solution to a problem. This problem is something you will need to choose.

You should use this time to start to think about what this problem might be. This is completely up to you but we will be on hand to offer guidance if you are unsure or would like to discuss your ideas. In the past students have created solutions for:

- Food ordering systems
- Games
- Social networking
- Order systems for businesses
- Quizzes

As you consider your project ideas you should, think about the following:

- What the problem is you are trying to solve
- How you are going to ensure it is a project you can focus on for 6 months
- Who your intended user is
- How you intend to show a range of programming techniques (libraries, storing data, programming style, data structures, interaction with hardware, interaction with networks, combining different technologies)
- Which language(s) you plan to use

You should aim to come up with at least 3 proposals that you can bring to the lessons in September and discuss their suitability. Each proposal should include:

- A description of the problem to solve
- A break down of sub tasks required to complete the solution
- 5-10 success criteria
- Examples of programming techniques you plan to use
- Who will use the program
- Which language(s) you plan to use

Project preparation

To help prepare for your project you should do some programming in your intended language(s). You can practice this using:

- Code academy
- Coding bat
- Code conquest
- Code school
- W3 schools
- Code club every Tuesday 1-2pm on Teams (email Mr Sexton for full details on how to join)