# A Level
# Computer Science

**Entry Requirements:**
- 5 GCSEs at level 5 or above, including maths and English
- Maths at level 6 or above
- If you haven't studied IT or computer science at GCSE, don't worry, you can still take the A Level

**Why choose Computer Science?**

The A Level Computer Science course at Middlesbrough College Sixth Form is not about learning to use tools or just training in a programming language, instead the emphasis is on computational thinking and problem solving with 50% of the course involving practical programming.

The course boasts a 100% pass rate for the last three years with a higher than national average A-C grades!

As a large focus of computing is on analytical thinking and problem solving skills, CS is valued by employers and Universities.

It is a discipline where the emphasis is on computational thinking, general problem-solving, and algorithmic and mathematical reasoning. Many disciplines such as engineering, science and business can utilise these skills.

You will develop a broad range of theory and practical skills and knowledge in areas such as programming, databases, data structures.

Good A Level combinations include Maths, Further Maths, Physics, Chemistry, Biology, Business and Media.

## Study at our dedicated Sixth Form Building and new Computer Science suite

Taking aspirations higher

## Course Content & Assessment:

**Paper 1** – tests your ability to program as well as the theoretical knowledge from topics listed below. The units main focus is on designing, writing and testing programs in C#
• Programming
• Data structures
• Algorithms
• Theory of Computation

**Paper 2** – tests your knowledge of topics such as:
• Data representation
• Computer systems
• Computer organisation and architecture
• Communication & Networking
• Database and Big Data, Functional Programming
• Consequences of Uses of Computing

| Paper 1 | 40% of A-level | On screen exam 2.5 hours 100 marks |
|---------|----------------|-----------------------------------|
| Paper 2 | 40% of A-level | Paper exam 2.5 hours 100 marks |
| NEA | 20% of A-level | 75 marks |

## FAQ

**Do you need GCSE Computer Science?** No, the course is aimed at no previous knowledge and programming skills are learnt at your own pace.

**What are the entry requirements?** 5 GCSEs at Level 5 or above including Maths at Level 6 or above & English at 5 or above.

**What do students go on to do with A Level CS?** On average 40% go on to study CS at University, others to study Maths, Physics, or other degree courses. Students also progress to Computing apprenticeships and have also gone into the RAF.

**Which programming languages will I study?** We study C#, console and windows based. Assembly language, SQL and functional programming language Haskell

**How big are the class sizes?** There are 16 machines in the CS suite so that is the maximum, on average about 10 students in a group. Currently in Year 1 there are 13 students and Year 2 there are 7.

**What are computing facilities like?** The CS suite has recently been upgraded to Intel i7 processors 3Ghz with 16 Gb Ram and NVIDIA GeForce RTX 2060 Super Graphics Cards. OS is Windows 10 Enterprise Edition. The room is dedicated to CS students and available to Computing students outside of class time.