



GCSE Computer Science

Dear Student,

Congratulations on securing your place on the GCSE Computer Science course here at Harris. You've already had a taste of the subject in Key Stage 3, but now you've chosen to explore it in greater depth – welcome to the next level of digital thinking, innovation, and problem-solving.

Computer Science is about far more than simply using technology – it's about understanding how it works, creating new solutions, and developing the skills that will shape the future. You are about to begin a journey into the digital world – exploring how computers think, how data flows, and how software shapes our lives.

Over the next two years, we will be exploring a wide range of topics that combine logical reasoning, mathematics, creativity, and real-world problem-solving:

- **Algorithms and Programming:** Learn to think like a computer by writing efficient, logical code using Python – one of the most widely used languages in the world today.
- **Computer Systems:** Discover what makes a computer tick, from binary numbers to processors, RAM, and storage devices.
- **Data Representation:** Understand how images, sounds, and text are represented using only 1s and 0s.
- **Cyber Security:** Investigate how hackers attack systems, and how to protect digital information in a connected world.
- **Networks and the Internet:** Explore how data travels around the globe, and how systems communicate securely and efficiently.
- **Ethical, Legal and Environmental Impacts:** Reflect on the bigger picture – how technology affects individuals, society, and the planet.



Assessment:

You will sit two written exam papers at the end of Year 11, each worth 50% of your final grade. These exams will test both your theoretical knowledge and your ability to think logically and analytically, especially when it comes to solving computational problems and writing code-based solutions.

Preparing Over the Summer:

To give yourself the best start in September, here are a few things you can do over the summer holidays:

- ◆ Practise Python programming – try simple projects like a calculator, quiz, or number guessing game. Free platforms like Replit or W3Schools Python are great for getting started.
- ◆ Watch engaging videos – channels like Craig ‘n’ Dave, Computer Science Tutor, and Crash Course Computer Science on YouTube can help build your understanding of tricky concepts in a fun, visual way.
- ◆ Use BBC Bitesize GCSE Computer Science (Edexcel) – their content is tailored to your course and includes quizzes and videos to help you revise.
- ◆ Play logic and coding games – games like LightBot, CodeCombat, or even Sudoku help build computational thinking skills.
- ◆ Learn the basics of binary and logic gates – being confident with binary, logic diagrams, and conversions will give you a strong head start.

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Computer Science is more than just lines of code – it's the key to the modern world. From designing apps and building websites to controlling robots and understanding cyber threats, the skills you'll gain are among the most valuable you can develop in the 21st century.

We can't wait to get started with you in September. If you have any questions about the course or want a few extra resources to explore, don't hesitate to reach out to your Computer Science teacher.

"Everybody in this country should learn how to program a computer... because it teaches you how to think." — Steve Jobs

See you soon, and welcome to GCSE Computer Science.

— The Computer Science Department

Harris Church of England Academy



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