



President  
Kennedy  
School

Building Brighter Futures



STOKE PARK  
— SCHOOL —

# Computer Science

"Education should prepare students for jobs that don't yet exist, using technologies that haven't been invented, in order to solve problems we don't even know are problems yet."

Richard Riley

Computer Science starts with a blank screen and ends with changing the world. Bitcoin, Facebook, Google and iOS all began the same way: by opening a blank file and starting to type. We aim to deliver the skills you need to add to that list. The subject is delivered by some of the best specialists in the city, and provides an excellent base for progression on to university or the world of work. Our students develop excellent problem-solving skills and many are able to begin earning as freelancers before even finishing the course.

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## Entry Requirements

- 5 GCSEs at Grade 5 or above.
- High grades in Maths and Computer Science are desirable

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## Topics covered

### Paper 1 – 40%

- 1.1 The Characteristics of contemporary processors, input, output and storage devices
- 1.2 Software and software development
- 1.3 Exchanging data
- 1.4 Data types, data structures and algorithms
- 1.5 Legal, moral, cultural and ethical issues

### Paper 2 – 40%

- 2.1 Elements of computational thinking
- 2.2 Problem solving and programming
- 2.3 Algorithms

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## Skills you will develop on the course

- Building and maintaining of computers
- Coding in Python and JavaScript
- Web design in HTML and CSS
- Databases in SQL
- Technical understanding of the internet and networks

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## Assessment

- 40% - Exam – Computer Systems – 140 marks, 2hrs 30 minutes.
- 40% - Exam – Algorithms and Programming – 140 marks, 2hrs 30 minutes.
- 20% - Non-Exam Assessment – Programming project

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## Educational trips, visits and wider experiences

In A -Level Computer Science, you will have the opportunity to:

- Disassemble and reassemble computers.
- Learn to use 3D printers and create your own designs.
- Build and pilot robots.
- Build your own website using HTML and Bootstrap (and use your skills to make money as a freelancer).
- Meet industry experts in Cybersecurity, Data analytics and Healthcare and have a go at their work.

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## What type of students will do well on this course?

- Interested in computers and systems.
- Enjoys learning code and exploring new ideas.
- Likes getting stuck on a difficult problem and overcoming it.
- Good revision routines and self-study practice.
- Excited to learn more about the world!

## Good indicators that Computer Science might be for you:

- Maths is one of your favourite subjects.
- You often learn new skills at home.
- You enjoy puzzle games and logic challenges.
- You've learned a bit of code already and would like to know more.

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## For more information contact:

- Talk to Mr. Curran – [curran.p@barrshill.coventry.sch.uk](mailto:curran.p@barrshill.coventry.sch.uk)
- Complete an hour of code on [code.org](https://code.org)

## Post-School Progression Opportunities

University	Entry requirements	Other similar courses offered
<b>Aston University</b> Computer Science BSc(Hons)	BBB	Computer Science with Business BSc, Cybersecurity BSc, Electronic Engineering and Computer Science MEng
<b>University of Bristol</b> Computer Science and Electronics with Study Abroad MEng	ABB-AAA including Mathematics	Computer Science with Innovation MEng, Computer Science BSc,
<b>Birmingham University</b> BSc Computer Science with Digital Technology Partnership. (Apprenticeship with PwC)	AAA, must include Maths grade A	Computer Science BSc Artificial Intelligence and Computer Science BSc Computer Science with Study Abroad BSc

## Career Opportunities

### Python Developer

#### What would I do?

- Develop software for applications and websites.
- Create links between data and APIs, like Amazon Web Services.
- Use machine learning to predict the outcome of a range of activities, e.g. reducing financial trading.

**Salary: Starting:** £25,000

**UK average:** £57,500

**Routes in:** Bachelor's degree or significant experience in programming.

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### App Developer

#### What would I do?

- Supervise the work of programmers, technologists and technicians and other engineering and scientific personnel.
- Train users to use new or modified equipment.
- Specify power supply requirements and configuration.
- Recommend purchase of equipment to control dust, temperature, and humidity in area of system installation.
- Develop and direct software system testing and validation procedures, programming, and documentation.
- Modify existing software to correct errors, allow it to adapt to new hardware, or to improve its performance.
- Design, develop and modify software systems, using scientific analysis and mathematical models to predict and measure outcome and consequences of design.

**Salary: Starting:** £27,500

**UK average:** £44,055

**Routes in:** Bachelor's degree in Computer Science