

Course information for Parents

Year 12 & 13 Subject: AS / A Level Computer Science

Faculty Area	Computing	Subject Learning Leader	Mr. Z. Rathor zrathor@thehazeleyacademy.com
Examination Board	OCR	Specification Code	A2: H446

Subject ContentComponent 1: Computer Systems

- The characteristics of contemporary processors, input, output and storage devices
- Software and software development
- Exchanging data
- Data types, data structures and algorithms
- Legal, moral, cultural and ethical issues.

Component 2: Algorithms and Programming

- Elements of computational thinking
- Programming and problem solving
- Pattern recognition, abstraction and decomposition
- Algorithm design and efficiency
- Standard algorithms

Component 3: Programming Project

- Students select their own user-driven problem of an appropriate size and complexity to solve. They will need to analyse the problem, design a solution, implement the solution and give a thorough evaluation.

Additional Equipment Needed

- It is recommended that students have a suitable computing device that allows them to develop their programming skills and classwork outside of lessons, using a range of subject specific programming software.

Assessment Details:

This qualification is a linear qualification, subsequently at A2 students will be assessed on all three components either by written examination and some coursework evidence. Components 1 and 2, contributes 80% of the final qualification, each by an exam lasting 2 hours 30 minutes. Component 3 coursework is graded out of 70 marks and is worth 20% of the final qualification.

To be successful students will need to be able to:

- Develop computational thinking skills by logically breaking down decision processes to create their own algorithms and program code within Python, SQL, and Java based Greenfoot program environments
- Persevere with new and engaging coding languages & concepts
- Refine extended exam questions to incorporate acceptable language and point structures using past paper questions and mark schemes
- Apply mathematical skills working with processes and procedures
- Investigate real life examples how the legal framework supports individuals and businesses
- Organise deadlines and submissions using the Google Classrooms learning environment, combined with open source Google Drive and Docs

What can I do to support my child at home?

To support your child's learning we recommend the following approaches:

- Provide access to a computing device that will allow them to code outside of the classroom environment.
- Log in to Google Classrooms from home with your child, using their Hazeley account to see what they have been doing in lessons. Parents can see what tasks have been set and their deadlines.
- Ask your child to explain what code they have created in class and what it could be used for in a real life example.

Recommended resources for the course:

Websites:

OCR exam board links:

- Official OCR site: <http://www.ocr.org.uk/qualifications/as-a-level-gce-computer-science-h046-h446-from-2015/>
- A2 Specification: <http://www.ocr.org.uk/Images/170844-specification-accredited-a-level-gce-computer-science-h446.pdf>

Please note that students may be required to log in using their school account to access their progress:

- Google Classroom: <https://classroom.google.com/>
- Hazeley ICT & Computer Science Theory Website: <https://sites.google.com/a/thehazeleyacademy.com/ict-computer-science/key-stage-5/ocr-computer-science>
- CodeCademy: <https://www.codecademy.com/>
- Khan Academy: <https://www.khanacademy.org/>
- Teach-ICT: www.teach-ict.com

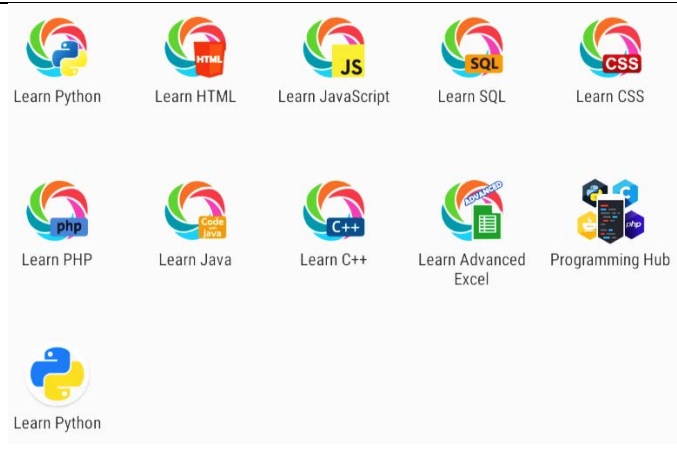
Books:

- OCR AS and A Level Computer Science (ISBN: 978-1910523056) * Highly recommended by staff
- OCR A Level Computer Science Paperback (ISBN: 978-1471839764)



Apps: There are lots of great apps available to support learning outside of the classroom, here are a few that have been tested by staff to encourage wider reading and skill development. These are available through Google Play.

Home Study & Independent Learning **Parental Support Information**



Teaching Staff Contact Details

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