



PARK HIGH SCHOOL

Computer Science

Exam Board: OCR

Course Specification: [H046](#)

Qualification obtained: OCR A Level in Computer Science

Lead Teacher: Ms Tisson

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Subject Overview:

Computer Science is a linear qualification with 100% external assessment. It is a practical subject where students can apply the academic principles learned in the classroom to real world systems. There is a great emphasis on mathematical skills used to solve problems.

The two examined components are: 'Computing principles', and 'Algorithms and programming'.

For the 'Computing principles' component, students will learn about the following topics: the characteristics of contemporary processors; input, output, and storage devices; software and software development; programming; exchanging data; data types, data structures and algorithms; legal, moral, ethical and cultural issues.

For the 'Algorithms and programming' component, students will: understand what is meant by computational thinking; understand the benefits of applying computational thinking to solving problems and be able to use algorithms to describe problems.

For their programming project, students will choose a computing problem to work through according to the guidance of the specification. This requires them to analyse, design, develop and evaluate a solution.

Assessment percentage Exam: 80%

Assessment percentage Coursework: 20%

Progression Routes:

This can lead to degree level courses with possibilities including Computer Science, Multimedia, Web Design, Software Engineering, Artificial Intelligence, Business Systems and Electronics.

GCSE Subject Exam results minimum requirements:

- A grade 6 in *Computer Science* OR Grade 6 in *Mathematics*
- At least 6 other GCSE subjects with Grade 4s. These **MUST** include *English Language* and *Mathematics*.

Complementary learning:

- Mathematics

"I like computer science because it is different and interesting, teachers provide great support, that allows me to reach my goals. The course helps you to gain skills such as thinking logically. I also enjoy learning how to write code and working independently on tasks."

Year 12

Topics covered:

Component 1:

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

Component 2:

- Elements of computational thinking
- Problem solving and programming
- Algorithms to solve problems and standard algorithms

Year 13

Topics covered:

Component 1:

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

Component 2:

- Elements of computational thinking
- Problem solving and programming
- Algorithms to solve problems and standard algorithms

Component 3:

- *Programmed Solution to a Problem* - Candidates discuss, investigate, design, prototype, refine and implement, test and evaluate a computerised solution to a problem chosen by the candidate which must be solved using original code.

Assessment

Is 80% Exam and 20% Coursework. There are 2 separate exams (HA445 (01) & HA446(02)) that are sat at the end of Year 13.

Unit Code	Unit Title	Guided Learning Hours	Assessment Details	Weighting
HA445 (01)	Computer Systems	2hrs per week	Written examination in Year 13: 140-mark paper, 2hr 30min	40%
HA446(02)	Algorithms and Programming	2hrs per week	Written examination end of Year 13: 140-mark paper, 2hr 30min	40%
HA446(03)	Programming Project	3hrs per week	Non exam assessment: 70-marks	20%

Additional information

Course specific equipment:

- One folder
- Dividers
- Notebook
- USB
- OCR AS and A Level Computer Science from PG online

Essential Reading Material:

OCR A Level Computer Science 9781910523-05-6

Essential algorithms for A Level Computer Science Paperback 9781794359420

Essential Maths Skills for AS/A Level Computer Science 9781471863578

Recommended resources:

<http://craigndave.org/>

<http://www.bbc.co.uk/schools/0/computing/>

<http://interactivepython.org/runestone/static/pythonds/index.html#>

Enrichment:

Talks