

COMPUTER SCIENCE

Exam board: OCR

% of exam vs. coursework/practical assessment

20% coursework, 80 % exam based (2 x 40% exam papers)

Length of exams: Paper 1 - Computing Fundamentals - 2 hours 30 minutes

Paper 2 – Algorithms and Programming – 2 hours 30 minutes

Breakdown of units:

Coursework

Independent Project – Students have between September of their final year to March (six months) to create a prototype product for a client and write a report containing analysis, design, code, visual output & evaluation. Projects are commonly written in SQL, Java, Python

Typical examples have included :-

- Mobile app for teachers and students to communicate room changes, instant work feedback, homework, key announcements etc
- A fully 3D created videogame
- League of Legends web-based leader board and marketplace
- Database for a private company

Examinations

Paper 1: Computing Fundamentals

- The history of Computing & The Internet
- Inside of a computer (Components, RAM/ROM/Virtual storage/Cache/Cores/Clock speed)
- Input/Output/Process
- Storage devices (Magnetic, Flash & Optical)
- Fetch/Decode/Execute Cycle + ALU/CIR/MDR/MAR/PC (How a computer really works)
- Binary/Hexadecimal/ASCII & UNICODE
- Compression & Encryption
- Little Man Computer (LMC) assembly programming
- Databases / Networks / Web Technologies
- Applications & System Software (Open & Closed source software + Utilities)
- Legal, social, moral & ethical issues (computer law + real world issues)

Paper 2: Algorithms & Programming

- o Introduction to programming basics and techniques (Learning Java, HTML, Python, Javascript, SQL, Pseudocode)
- o Waterfall model + User Centred Design
- o Algorithms & Flowcharts
- o Advanced Binary (addition and subtraction)

Additional study – designed to enhance ICT & Computer Science skills in preparation for the independent project

Audacity & Windows Movie Maker (Audio/Video editing)
Scratch & Kodu (2D & 3D game design)
Adobe Fireworks (Stop motion animation)
Adobe Flash (Digital Animation)
Adobe Dreamweaver (Website Design)
Google Sketch up (3D architecture & Design)

Overlap with other subjects – Computer Science works well with Maths, Science, Business Studies, Photography and Graphic Design.

Updated 15/6/18



ROCHESTER
INDEPENDENT COLLEGE
Day & Boarding School | Year 7 to 6th Form