# St. Wilfrid's R.C. College

# Computer Science Curriculum

| | Cycle 1 | Cycle 2 | Cycle 3 |
|---|---|---|---|
| **Year 10** | 2.2 Programming fundamentals part 1 | 2.1 Algorithms<br>2.2 Programming fundamentals part 2 | 2.4 Boolean logic<br>2.2 Programming fundamentals part 3 |
| | **Extended writing opportunity: Writing like a Computer Scientist** | | |

| | Cycle 1 | Cycle 2 | Cycle 3 |
|---|---|---|---|
| **Year 11** | 1.1 Systems architecture<br>1.2 Memory and storage | 1.3 Computer networks<br>1.4 Network security | 1.5 System software<br>1.6 Ethical, legal, cultural and environmental impacts of digital technology |
| | **Literacy: Writing an essay, the environmental impacts of digital technology** | | |

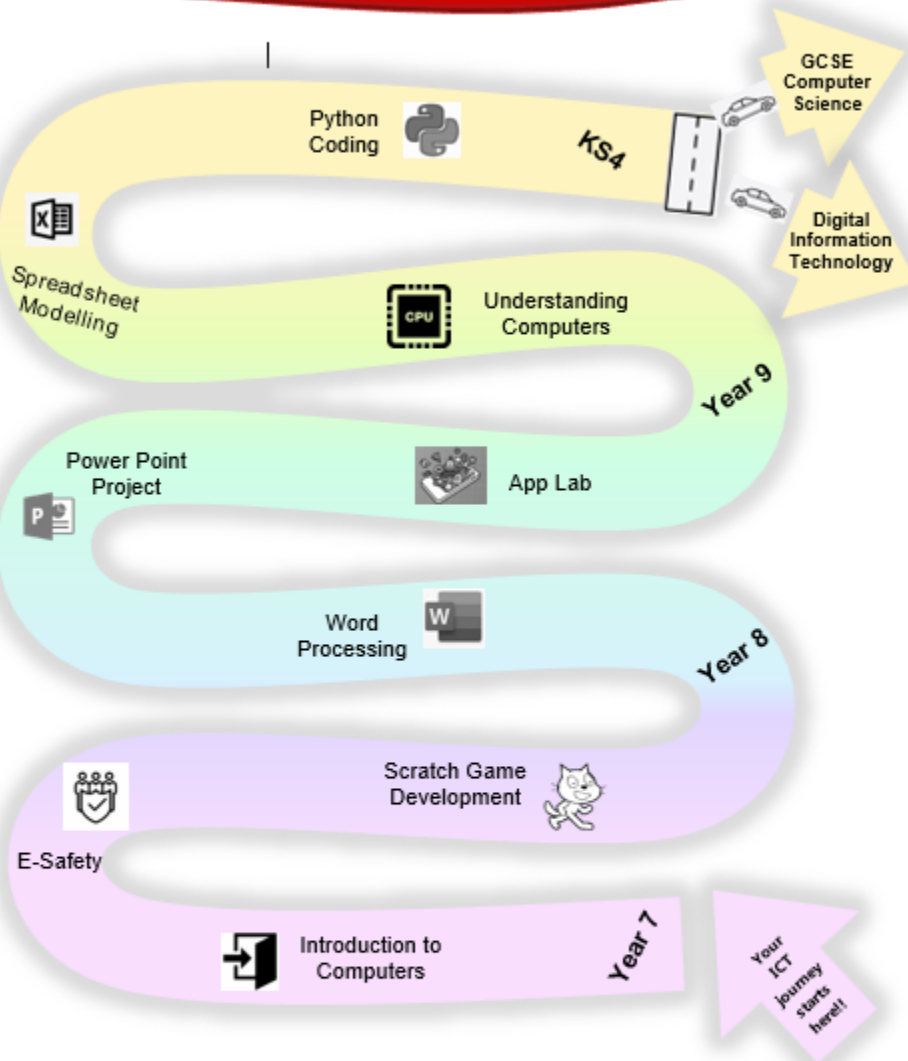| | Cycle 1 | Cycle 2 | Cycle 3 |
|---|---|---|---|
| **Year 12** | 141 Data types<br>221 Programming techniques | 132 Databases<br>134 Web technologies | 111 Structure and function of a processor<br>131 Compression encryption and hashing |
| | **Extended writing opportunity: Writing like a Computer Scientist, the dangers of social media** | | |

| | Cycle 1 | Cycle 2 | Cycle 3 |
|---|---|---|---|
| **Year 13** | 133 Networks<br>121 System software | 122 Application generation<br>123 Software development | 231 Algorithms |
| | **Extended writing opportunity: Writing like a Computer Scientist, the dangers of social media** | | |

# Learning Journey

**Bishop Chadwick** Catholic Education Trust

**Curriculum Narrative:** ICT

GCSE Computer Science

KS4

Python Coding

Digital Information Technology

Spreadsheet Modelling

Understanding Computers

Year 9

Power Point Project

App Lab

Word Processing

Year 8

Scratch Game Development

E-Safety

Introduction to Computers

Year 7

Your ICT Journey starts here!!

| Why do computer scientists read? | Write like a computer scientist | Key Terminology | |
|---|---|---|---|
| To investigate how to be safe online | Writing code meeting syntactical rules | Year 7 | Passwords, Data, Social Networking, Cyberbullying, Variables, Scripts. |
| To interpret spreadsheets | Typing letters, emails and presentations for a scenario | Year 8 | Format, Style, Edit, Creative, Graphics, Animation, Transition |
| To read programming manuals | Writing coding blocks | | |
| | Inputting data into spreadsheets | Year 9 | Elements, CPU, Binary, Networks, Model, Conditional Format, Algorithm, Casting, Loops, Validation |

**Course: OCR GCSE Computer Science**

**Summary of papers/coursework and assessment objectives in table**

| |
|---|
| Paper 1: Computer systems = 50%. 1.25 hour examination. |
| Paper 2: Algorithms = 50%. 1.25 hour examination. |
| Coursework: 10%<br>Brief overview |

**Overall course description**

**The key features of OCR's GCSE (9–1) in Computer Science for you and your students are:**
**• A simple and intuitive assessment model, consisting of two papers, one focusing on computer systems and one with a focus on programming, computational thinking, and algorithms. Both papers have identical weighting and mark allocations**
**• a specification developed with teachers specifically for teachers. The specification lays out the subject content clearly**
**• a flexible support package formed after listening to teachers' needs. The support package will enable teachers to easily understand the requirements of the qualification and how it is assessed • a team of OCR Subject Advisors who support teachers directly and manage the qualification nationally**
**• the specification has been designed to transition seamlessly into Computer Science at AS Level and/or A Level.**

**This specification/qualification will enable students to develop:**
**• valuable thinking and programming skills that are extremely attractive in the modern workplace • a deep understanding of computational thinking and how to apply it through a chosen programming language**

**Course: Edexcel GCE Computer Science**

Summary of papers/coursework and assessment objectives in table

| |
|---|
| Paper 1: Computer systems = 40%. 2.5 hour examination. |
| Paper 2: Algorithms = 40%. 2.5 hour examination. |
| Coursework: 20%<br>Brief overview: Project development, creating a software solution to meet a stakeholders needs |

Overall course description

The OCR A Level in Computer Science will encourage learners to be inspired, motivated and challenged by following a broad, coherent, practical, satisfying and worthwhile course of study. It will provide insight into, and experience of how computer science works, stimulating learners' curiosity and encouraging them to engage with computer science in their everyday lives and to make informed choices about further study or career choices. The key features of this specification encourage:
• emphasis on problem solving using computers
• emphasis on computer programming and algorithms
• emphasis on the mathematical skills used to express computational laws and processes, e.g. Boolean algebra/logic and comparison of the complexity of algorithms
• less emphasis on ICT.
Centres and learners have the opportunity to:
• produce a slimmed down programming project which is more refined and more focussed on coding
• choose the project title and problem to be solved
• choose any suitable programming language
• include agile methods