Years 12-13 Computer Science
LEARNING JOURNEY

Year 12 → **Understanding and Applying programming and Computational theory Skills** → Year 13

Final A level exams

Examinations

Revision

Complete the Development phase using a iterative model

Complete the testing and evaluation phase

Complete the project

Project

How computers work out the best and fastest route to solve a problem e.g. send an email

Project

Project

Algorithms

How to work out the time taken to execute an algorithm

Complete the design elements, algorithms, usability, test design

Independent study unit

Computers and the law

Computers and moral principles

Plan and analyse your choice of project completing your Analysis before the summer break

? Problem recognition

Algorithms

Project

Legal, Moral, ethical and cultural issues

YEAR 13

Project

Computational Thinking

Writing advanced algorithms using Pseudo code

Computational Thinking

Computers use in different cultures

Ethical use of Computers

Search and Sort algorithms

Problem Solving

How computers process complex relationships such as finding the best route to a location

Revisit logic gates and extend Boolean algebra to include how to simplify Boolean expressions

Use a simpler method to simplify Boolean expressions

Develop an understanding of computational thinking

Computational Thinking

Structures

DATA

LUA

Boolean Algebra

Boolean Algebra

DATA Structures

How computers store data using lists, stacks and queues

Independent learning of LUA programming skills

How two different circuits can assist logic gates to perform additions on two or more bits

DATA Types

subtraction of binary numbers, how computers handle decimals and multiply and divide binary numbers

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Libraries T-Kinter, PySimpleGUI, SQLite

Advanced Database theory including use of a structured query (search) language

Creating an Independent study knowledge organiser

Aspects of different programs Paradigms and Writing complex algorithms

Components of a computer and their uses Knowledge organiser independent

Python functions

Databases

System Software & applications

Programming Techniques

Components of a computer

YEAR 12

Networks and web technologies

LUA

Software development

Develop coding skills in functions within Python

How search engines find all the information they present at your fingertips

Extend network knowledge from GCSE including coding using HTML/CSS and JavaScript languages

Introduce new Programming Language LUA

Develop Software development Skills (AGILE, RAD)

HTML Tutorial
HTML Tag Reference

CSS Tutorial
CSS Reference