

GCSE Computer Science Learning Journey (2 Year)



The Exam
Paper 1 and Paper 2 Exams

Revision Paper 1
Recap all knowledge

Review and Improvement
Detailed look into mocks



Mocks
Paper 1

Further Ahead
A-Level
College
University
Jobs

Exam Question Practice
How to answer exam questions

Revision Paper 2
Recap all knowledge

Exam Question Practice
How to answer exam questions

Data Structures
Recap on 1D and 2D lists.

Exam Style Practice
Understand the difference type of exam questions.

Mocks
Paper 2 Mock



Subprograms
Understand the difference between procedures and functions.



Libraries
Understand the time, math, turtle and random libraries.

Review and Improvement
Detailed look into mocks



Revision Paper 1
Recap all knowledge

Topic 6 - Programming

Cyber Security
Threats to digital systems

Environmental
Impact of devices

Topic 5 - Issues and Impacts

Network Security
• Firewalls
• Access Control
• Physical Security

YEAR 10

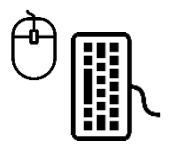
Recap on Core Skills
Recap on the main programming constructs and syntax

Ethical & Legal
collection and use of personal data

The Internet
How the internet is structured

TCP/IP
Transport Control Protocol Stack

Hardware
Input, output and storage



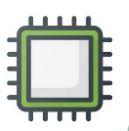
Software
Operating systems

Translators
Interpreters and compilers



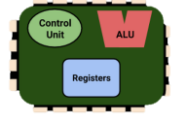
Types of Networks
LAN and WANs

CPU
How it works and the internal parts of the CPU



Topic 3 - Computers

The CPU
Registers of the CPU



TRANSLATE

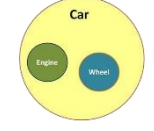
Topic 4 - Networks

Networks
Understand the use of networks

Topologies
Bus, Star and Mesh

A	B	Output
0	0	0
0	1	1
1	0	1
1	1	1

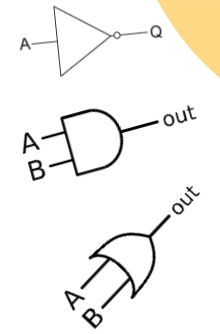
Searching Algorithms
Binary Search and Linear Search



Algorithms
• Pseudocode
• Flowcharts
• Program code

Topic 1 - Computational Thinking

Overflow
Binary number length



Truth Tables
• AND Gate
• OR Gate
• NOT Gate

Sorting Algorithms
Bubble Sort and Merge Sort

Decomposition and Abstraction
• Understand the benefits of breaking down problems.

Data Storage
Kb, Mb, Gb, Tb
Files Size

Functions
Understand the use of functions

Topic 2 - Data

Base 2 Numbers
Binary number conversions

Compression
Why we need compression



Encoding Data
Representing text, images and sound

Negative Numbers
Two's Complement

$f(x)$

Procedures
Use of procedures and 'blocking' code

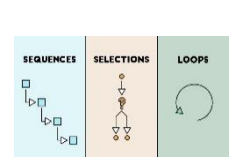
Binary Addition
Be able to add two binary numbers.

Base 16 Numbers
Understand hexadecimal

EBF6
5200
8097

Topic 6 - Programming

Variables
Use of global and local variables



Programming Constructs
Understand sequence, selection and iteration.

Variables
How to use variables and constants.

Programming
Develop code using Python and the IDE

YEAR 9



Hello
0 1 2 3 4
-5 -4 -3 -2 -1