

# GCSE Computer Science Learning Journey



**Exam Question Practice**  
How to answer exam questions

**Revision Paper 1**  
Recap all knowledge



**Mocks**  
Paper 1 and Paper 2 Mocks

**Exam Question Practice**  
How to answer exam questions

**Further Ahead**  
A-Level  
College  
University  
Jobs

**The Exam**  
Paper 1 and Paper 2 Exams

**Revision Paper 2**  
Recap all knowledge

**Review and Improvement**  
Detailed look into mocks

**Revision Paper 2**  
Recap all knowledge

**Programming and Computational Thinking**

**Project**  
Project based work to help independent programming and problem solving

**Recap from Year 9 and 10**  
Recap of skills from Year 9 and 10. Focus on building programs independently and solving problems

**Revision Paper 1**  
Recap all knowledge

**YEAR 11**

**Network Security**

- Firewalls
- Access Control
- Physical Security

**TCP/IP**  
Transport Control Protocol Stack



**Data Storage**  
Kb, Mb, Gb, Tb  
Files Size

**Overflow**  
Binary number length

**Topic 4 - Networks**

**Software**  
Operating systems

**Recap from Year 9**  
Recap of knowledge from Year 9

**Topic 3 - Computers**

**Compression**  
Why we need compression

**Recap from Year 9**  
Recap of knowledge from Year 9

**Translators**  
Interpreters and compilers



**The CPU**  
Registers of the CPU

**Recap from Year 9**  
Recap of knowledge from Year 9

**Recap from Year 9**  
Recap of skills from Year 9

**TRANSLATE**  
 $f(x)$

**Functions**  
Understand the use of functions

**Topic 1 - Computational Thinking**

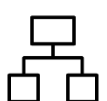
**Searching Algorithms**  
Binary Search and Linear Search

**Negative Numbers**  
Two's Complement

**Topic 6 - Programming**

**YEAR 10**

**Variables**  
Use of global and local variables



**Procedures**  
Use of procedures and 'blocking' code

**Recap from Year 9**  
Recap of knowledge from Year 9

**Sorting Algorithms**  
Bubble Sort and Merge Sort

**Topic 2 - Data**

**Environmental Impact**  
Impact of devices

**Topic 5 - Issues and Impacts**

**Topologies**  
Bus, Star and Mesh



**Types of Networks**  
LAN and WANs



**Cyber Security**  
Threats to digital systems

**Ethical & Legal**  
collection and use of personal data

**The Internet**  
How the internet is structured



**Networks**  
Understand the use of networks

**CPU**  
How it works and the internal parts of the CPU

**Truth Tables**

- AND Gate
- OR Gate
- NOT Gate

| A | B | Output |
|---|---|--------|
| 0 | 0 | 0      |
| 0 | 1 | 1      |
| 1 | 0 | 1      |
| 1 | 1 | 1      |

**Topic 2 - Data**

**Binary Addition**  
Be able to add two binary numbers.

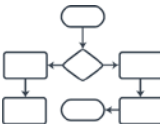


**Encoding Data**  
Representing text, images and sound

**Hardware**  
Input, output and storage

**Algorithms**

- Pseudocode
- Flowcharts
- Program code



**Base 2 Numbers**  
Binary number conversions



**Base 16 Numbers**  
Understand hexadecimal



**Topic 3 - Computers**

**Topic 1 - Computational Thinking**

**Operators**

- Arithmetic
- Comparison

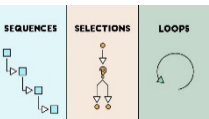


**Data Types**  
Make use of integer, real, Boolean, char.

**Topic 6 - Programming**

**YEAR 9**

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



**Programming Constructs**  
Understand sequence, selection and iteration.

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

**Variables**  
How to use variables and constants.

**Programming**  
Develop code using Python and the IDE

