GCSE Computer Science Learning Journey

Seaford Head Sixth Form Centre

YEAR 11

Further Ahead
A-Level
College
University
Jobs

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

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

Revision Paper 1
Recap all knowledge

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

Project
Project based work to help independent programming and problem solving

Programming and Computational Thinking

Network Security
- Firewalls
- Access Control
- Physical Security

YEAR 10

Topic 4 - Networks

TCP/IP
Transport Control Protocol Stack

Recap from Year 9
Recap of knowledge from Year 9

Software
Operating systems

Recap from Year 9
Recap of knowledge from Year 9

Topic 3 - Computers

Compression
Why we need compression

Data Storage
Kb, Mb, Gb, Tb
Files Size

Overflow
Binary number length

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

Functions
Understand the use of functions

Topic 1 – Computational Thinking

Searching Algorithms
Binary Search and Linear Search

Topic 6 - Programming

Negative Numbers
Two's Complement

Topic 2 - Data

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

Environmental
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

Topic 3 - Computers

Algorithms
- Pseudocode
- Flowcharts
- Program code

Base 2 Numbers
Binary number conversions

Base 16 Numbers
Understand hexadecimal

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.

Variables
How to use variables and constants.

Programming
Develop code using Python and the IDE