



Recap and Revision

- Final recap and preparation for the exams

During Year 11 we will recap various components of the programming unit from Year 10, with a second programming task to complete in order to fulfil the needs of the qualification to give you a full experience of the software life cycle.

Towards the end of the teaching, we will recap various aspects of the course and ensure that you are ready for the final examination.

Y11

1.6 Ethical, Legal, Cultural and Environmental Impact

- Recap programming from previous years
- Variables and assignment
- Programming constructs
- Operators etc.

Unit 2 Recap and Revision

1.5.1 Operating Systems

- Purpose and function of OS
- 1.5.2 Utility Software**
 - Purpose and function of utility software
 - Examples of Utility Software

1.3.2 Networks, Protocols and Layers

- Modes of connection
- Encryption
- IP and MAC addresses
- Standards
- Common Protocols and layers
- 1.4 Network Security**
 - Threats to computer systems
 - Identifying and preventing vulnerabilities

1.3.1 Networks and Topologies

- Types of network
- Factors that affect performance
- Different roles in networks
- Hardware
- Internet
- Topologies

1.1 Systems Architecture (recap)

- Recap of Von Neumann and common components of CPU from last year

1.2.3 Units (recap)

- Recap of units; especially data capacity and calculations

Throughout this first year of the course we will visit the content of **2.1.1 Computational Thinking** and **2.1.2 Designing, Creating and Refining Algorithms** a number of times. This is a key skill that you have to learn and we develop this through numerous programming tasks.

Following the teaching of content up to searching and sorting, you will have an opportunity to actually program a project using the skills and techniques that you have learned so far.

Y10

2.1.1 & 2.1.2

2.2.1 Programming Fundamentals

- Recap programming from previous years
- Variables and assignment
- Programming constructs
- Operators etc.

2.2.2 Data Types

- All content

2.1.1 & 2.1.2

2.2.3 Additional Programming Techniques pt1

- Strings and manipulation
- Handling operations
- Random number generation

1.2.3 Units

- The units of data storage
- How data needs to be converted
- Data Capacity

1.2.4 Data Storage

- Numbers
- Characters
- Images
- Sound

1.2.5 Compression

- Lossy
- Lossless

2.1.3 Searching and Sorting Algorithms

- Standard searching algorithms
- Standard sorting algorithms

2.4.1 Boolean Logic

- Logic Diagrams
- Truth tables
- Combination of operators
- Application logical operators

2.3.1 Defensive Design 2.3.2 Testing

1.1 Systems Architecture

- Architecture of CPU
- CPU performance
- Embedded systems

1.2 Memory and Storage

- Primary and Secondary Storage

2.5.1 Languages

- High-Level
- Low-Level
- Translators

2.5.2 The IDE

- Editors
- Error diagnostics
- Run-time environment
- Translators

Develop their capability, creativity and knowledge in computer science, digital media and information technology

Develop and apply their analytic, problem-solving, design, and computational thinking skills

Understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to identify and report a range of concerns