

Year 10 Computer Science Learning Outcomes

Unit 1: Algorithms

- Understand the fundamentals of algorithms.
- Understand the terms decomposition and abstraction relating to computing.
- Understand how flowcharts and pseudocode are used to create algorithms.
- Understand that computer systems take inputs, process these and provide outputs I/P/O

Unit 2: Programming (Part 1)

- Understand the different data types that are used in programming.
- Understand that programming uses sequence, selection and iteration.
- Understand how to create and use definite and indefinite iteration.

Unit 3: Programming (Part 2)

- Understand how to create and use selection.
- Understand how to create and use nested selection using Select Case and IF Then statements.
- Understand how to use arithmetic operators in programming.

Unit 4: Programming (Part 3)

- Understand how to use Boolean operators in programming.
- Understand the AND, OR and NOT Boolean operators and how they are represented.
- Understand how to handles files in programming.
- Understand how to create and use sub routines.
- Understand how to create and use functions.
- Use parameters in sub routines and function.

Unit 5: Data Representation

- Understand how computers store data using binary.
- Understand how to convert between different number systems.
- Understand how the ASCII system is used for character encoding.
- Understand how computers store images and sounds.
- Understand how computers use compression to save resources, including Huffman coding and binary trees.

Unit 6: Computer Systems

- Understand how to use Boolean Logic.
- Understand the different application software computer systems use.

- Understand how computers system architecture.
- Understand the fetch-execute cycle.

Unit 7: Networks

- Understand how wired and wireless networks are used.
- Understand the different network topologies.
- Understand network security.

Unit 9: Ethics

- Understand the ethical issues when using computer systems.
- Understand the wider role of digital technology in society.
- Understand the different legislation for computer systems.
- Understand how privacy is affected by the use of computer systems.

Year 11 Computer Science Learning Outcomes

Unit 1: NEA – Non-Exam Assessment (Part 1)

- Understand the process of creating a project which uses all of the elements of the non-exam assessment of the course.
- Understand how to analyse a problem.
- Understand how to design a solution to a given problem.

Unit 2: NEA – Non-Exam Assessment (Part 2)

- Understand how to use the different coding techniques to code the solution.
- Understand how to test the solution.
- Understand how to evaluate how well the program meets the needs of the clients.

Unit 3: Live NEA – Non-Exam Assessment

- Complete the 20-hour non-exam assessment in controlled conditions.
- Analyse the problem.
- Design a solution.
- Continue with the solution for the NEA.
- Code the solution.
- Test the solution.
- Evaluate how well the program meets the needs of the clients.

Unit 4: Theory and Revision

- Understand computer systems.
- Understand computer networks.
- Understand cyber security.
- Understand about the ethical and legal implications when using computer systems.