

A Level Computer Science

Overview

In this program students will gain a better understanding of how computers work. As the world is becoming increasingly technological, students will benefit from having a deeper knowledge of computers systems and advanced computational thinking skills. With a mentor, students will develop these assets in order to understand the main principles of problem-solving using computers, and to develop solutions using algorithms and programming. Students will use this problem-solving to explore complex theoretical concepts. In collaboration with a mentor, students will aim to enhance their technical abilities and be expected to apply their programming skills to problems related to other sciences; demonstrating the importance of computer knowledge in solving real-world problems and building collaborative work ethic.

Objectives

- Develop computational thinking to help solve problems using computers
- Enhance technical skills in order to use algorithms and programming to develop solutions to problems
- Understand the components of a computer system and how they interrelate
- Acquire the skills necessary to apply this understanding to develop computer-based solutions to problems
- Appreciate the benefits and risks of current and emerging computing technologies

Structure

- Reflect on current knowledge of the range of topics that Computer Science covers and identify strengths and weaknesses
 - Develop a personalised curriculum
- Incorporate various science problems into Computer Science in order to identify the value of technical knowledge in solving real-world problems
 - Enhance computational thinking
- Spend time familiarising oneself with computer coding language
- Practising programming skills in order to develop understanding of theoretical concepts
- Examine current and emerging computing technologies
 - Benefits of their use
 - Recognise potential risks
- Exam practice
 - Past papers
 - Sample model answers

