

What Is The Course?

- ▶ Developing an understanding of how computers hardware works.
- ▶ Learning about types of Software and their uses.
- ▶ Developing your thinking skills.
- ▶ Helping you to become a better at problem solving.
- ▶ Taking your skills in creating Algorithms to the next level.
- ▶ Moving your programming skills forward through your choice of Project.



Entry Requirements

- ▶ **GCSE Computer Science at Grade 5.** Students with lower prior to attainment will be interviewed.
- ▶ **You must have studied Computer Science at GCSE.**
- ▶ Students will be expected to complete a portfolio of summer work to enhance and refresh their programming skills.



Teachers

- ▶ Mrs A Jones - Head of Department
- ▶ Mr A Dawson - Assistant Head of 6th form



Course Outline

- ▶ Unit 1 Computer Systems worth 40%. Examined unit. This covers the theory behind computer systems.
- ▶ Unit 2 Algorithms and Programming worth 40%. Examined unit. This unit tests your ability to solve problems and develop algorithms to demonstrate potential solutions.
- ▶ Unit 3 Programming Project worth 20%. This is a coursework unit where you choose a project and design, build and evaluate a solution for your chosen scenario.



What You Learn With Mr Dawson

▶ Computational thinking

Opens doors for more than just students of technology. It is a way of thinking through problems and processing the steps to form a solution. I enjoy seeing my students learn new skills that they can apply to work as well as everyday life. I can see why universities and employers look on these skills so highly.

▶ Programming

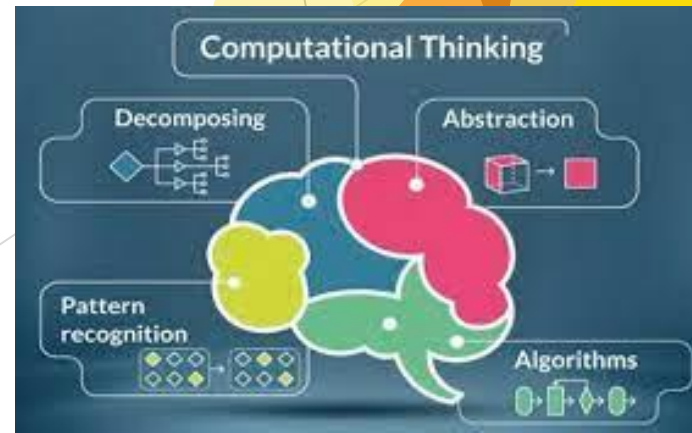
Tkinter allows students to use their imagination to create beautiful looking GUI as well as creating object animations that move in different ways. Programming is used to solve problems. Different students at A Level will solve the same problem in many different ways.

▶ Programming Project

Teaching my students the system life cycle and how to apply it is a real joy. Knowing this process will help my students relate their learning to industry is a great benefit and helps carve the way for those wanting to go into computer science at a higher level.

▶ Application Generation

Teaching Application software and software development allows me to show students the impact applications are having on society. There is a lot of reward attached to giving students an insight into this ever changing environment.

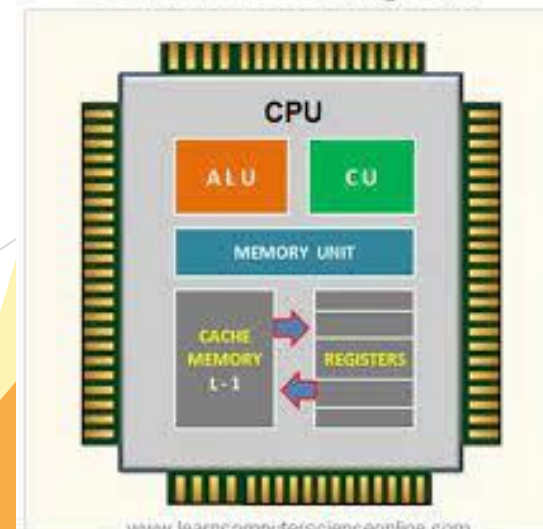


What You Learn with Mrs Jones

- ▶ **Computer hardware** teaches students about the key components inside a computer and how they work. Knowing what is under the lid, particularly the components within the CPU, helps students to understand how much happens every second within a computer. It also helps to solidify why efficient code runs more quickly.
- ▶ **Databases and SQL** - a really practical area of study which sees students learn how you can store and manipulate data making your time more productive. This builds skills that can be used in the project and in the world of work.
- ▶ **Web Technologies** - how are HTML, CSS, and Javascript used to make websites? We use Trinket to develop some practical web design skills which reinforces the key code that is needed for the exam. This topic also looks at the PageRank Algorithm and how it was used to help Google to become the dominant force in Search Engines knocking out old favourites such as InfoSeek and AltaVitsa!
- ▶ **IT Legislation and Ethics** is a really interesting area. It reinforces how the law is always playing catch-up to protect us from new technological threats. Looking at Ethics is always interesting - how far are we willing to go in letting computers control our lives. Hearing students debate about new and emerging technology is amazing, they always have such different viewpoints and ideas.
- ▶ **Floating binary and binary calculations** allow students to push their maths skills and apply decimal numbers to binary calculations. This stretches the knowledge students have from GCSE.
- ▶ **Networks and network security** is enjoyable as students will learn about how the internet works and how companies connect to the internet and in which way. Network security allows students to learn more about hackers and the type of attacks that companies and organisations receive.



Central Processing Unit



Results

| | 2020 | 2021 | 2022 | 2023 |
|----|------------|------------|------------|------------|
| A* | 0% | 20% | 0% | 30% |
| A | 20% | 10% | 9% | 20% |
| B | 20% | 30% | 9% | 0% |
| C | 60% | 10% | 36% | 30% |
| D | 0% | 0% | 45% | 20% |
| E | 0% | 30% | 0% | 0% |



Pathways

- ▶ Computer Science really develops your thinking and problem solving skills which will help in all aspects of your life and studies. It can be used to help you to gain acceptance onto a **degree** course in any discipline or onto an **Apprenticeship**.
- ▶ **University** courses include: Cyber Security, Computer Science, Computer Forensics, Network Management, Data Science, Game Development, IT, Software Development, Game Design, and Artificial Intelligence.
- ▶ **Apprenticeships** include: Computer Science, Data Analysis, Software Development, IT, Networking.



Contact Details

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