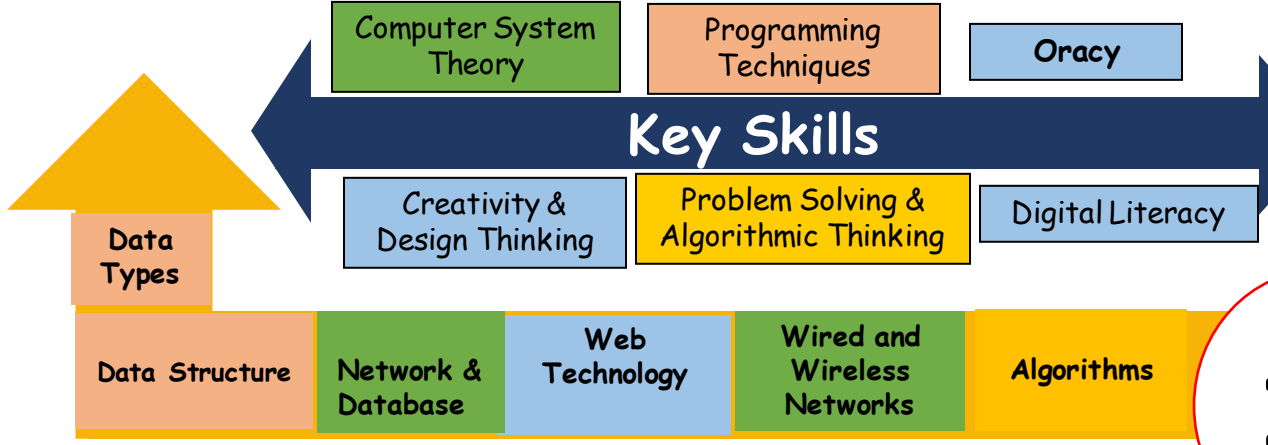


Department Intent: To equip students to be compassionate users and curious innovators of technology



Mastery at Year 13:

- Independence developed with Programming Project completion
- Understanding of and ability to apply the fundamental principles and concepts of computer science including: abstraction, decomposition, logic, algorithms and data representation.
- Analyse problems in computational terms through practical experience of solving such problems including writing programs to do so
- Design, program and evaluate computer systems that solve problems, making reasoned judgements about these and presenting conclusions

Mastery at Year 12:

- Independence developed with Programming Project completion
- Understand and Evaluate the individual (moral), social (ethical), legal and cultural opportunities and risks of digital technology
- Understand the characteristics of contemporary processors, input, output and storage devices
- Understand Software and software development
- Exchanging data
- Data types, data structures and algorithms

Mastery at Year 11:

- Understand and apply the fundamental principles and concepts of Computer Science, including abstraction, decomposition, logic, algorithms, and data representation
- Analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs in Python and Pseudocode
- Understand the components that make up digital systems, and how they communicate with one another and with other systems
- Understand and Evaluate the impacts of digital technology to the individual and to wider society

Mastery at Year 10:

- Use Decomposition and Abstraction to simplify problems
- Know and use programming techniques to Interpret and write algorithms using Flowcharts and Pseudocode.
- Understand and perform the Search and Sort algorithms
- Secure knowledge in the basic architecture of computer hardware: CPU, Memory, Secondary Storage devices Computer networks. Understand how data is stored in binary and be able to use the conversions in additions. Know why different topologies suit different scenarios.

Mastery at Year 9:

- Explain the impact of technology on ethical, legal and environmental issues
- Create, reuse, revise and repurpose digital artefacts for a given audience by creating simple webpages for a website
- Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming
- Understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers
- Use computational thinking skills to solve real world problems and physical systems
- Use programming language (Python), to solve a variety of computational problem

Mastery at Year 8:

- Use online tools, recognize inappropriate content and being safe online
- Create, reuse, revise and repurpose digital artefacts for a given audience by creating simple webpages for a website
- Identify and solve a real world problem by design an app for a community
- Perform calculations, display and analyze data using Spreadsheet models that represent real life systems
- Use computational thinking skills to solve real world problems and physical systems
- Use programming languages (Scratch, Python), to solve a variety of computational problems

Mastery at Year 7:

- Use technology safely and responsibly (online)
- Use Microsoft software skills (Spreadsheet, Word & PowerPoint) for everyday life.
- Understand the hardware and software components that make up computer systems
- Use computational thinking skills to solve real world problems and physical systems
- Use 2 programming languages (Scratch, Python), to solve a variety of computational problems

