Computer Science teaches a pupil how to be an effective author of computational tools (i.e. software), while IT teaches how to be a thoughtful user of those tools.

We believe that every pupil should have repeated opportunities to design, write, run and debug executable programs. Computer Science is a practical subject where invention and resourcefulness are encouraged. It prepares pupils to solve problems, design systems, and understand power and limits of human and machine intelligence.

At Lammas School we want our pupils to understand and play an active role in the digital world that surrounds them, not to be a passive consumer of an opaque and mysterious technology.

Pupils are expected to apply the academic principles they have learned to the understanding of real-world systems, and to the creation of purposeful artefacts/software.

TLS Computer Science Curriculum

THE LAMMAS SCHOOL

Engineering, Aviation, Applied Science

Alevels, Maths/Further Maths

Business Accountancy and Finance

Computer game coding

University

Exam Revision

Revision Programming Project:
-Development

Computational thinking
-Abstraction Programming techniques
-Algorithms & Data Structures

Upper VI

Project: Data Structures: lists, binary, hash -Data Structures: trees, stack, queues

Exchanging data: Data bases -Networks: DNS, **Packet Web technologies:** CSS and page rank

Computer System: Structure & function
-System software FDE cycle
-Programming project: analysis

Lower VI

-Revision
-Assessment

Computational Thinking
-Algorithms
- Data Representations

Programming (first 6 six weeks of term)
Coding
-Project (second half of summer term)
-Pupils will identify and learn the basic principles of programming
-Programming project- using techniques learnt from prior learning and applying them to programming project

Year 10

Computer Systems
-System Architecture
-Memory and Storage

Network and Security
-Types and uses of
-Networks System security and software

-Ethics and culture
-Ethical, legal and cultural issue Revision & Programming

Year 11

Programming Technique
-NEA
-NEA

Computer systems
-Students will understand the basic fundamentals of each computer and how they work together to form a computer system

E-safety
-What constitutes inappropriate use of digital technologies - crime and social media abuse
-Keeping safe online: inappropriate and/or dangerous interaction with other users

Year 9

Data Representation (Binary)
-Students will understand the functionality of binary within images and sound
-The conversion of binary to denary and vice versa as well as converting in to hexadecimal.
-What is file size and how do we modify it to save storage space?

Python (algorithms and programming)
-Identify the basic functionality of python
-Through coding pupils will understand how to create basic programs as well as how to identify errors and the importance of accurate syntax

Year 7

Introduction to computing & E-safety
- Digital technologies and safe internet use
-Files & folders
- Storage media

HTML (Web-site creation)
-Students will identify and use the appropriate HTML tags in order to create a basic website with real life applications, e.g. an information site about aspects of school life for younger students.

Scratch (Algorithm and game development)
-the importance of algorithms in order to create a sequence of instructions.
- Game development tasks allow pupils to use algorithms to further develop their Scratch project.

Year 8

Algorithms and efficiency - an introduction to the idea that the algorithm you use can make a difference to the speed with which something takes place - e.g. sorting and searching. Why is it important that our programs are efficient?

Wisdom | Courage | Leadership