



Computing



Archdiocese of Liverpool

Curriculum intent:

The Computer Science Department intends to equip all pupils to use computational thinking and creativity when understanding the modern world. We understand that Computer Science has deep links to Mathematics, Science and Design and Technology. We aim to build on this and teach the principles of Information and Computation.

We equip pupils to use Information Technology to create programs, systems and a range of content. Computing ensures that pupils become digitally literate at a level suitable for the future workplace and as active participants in a digital world.

Year 8

TERM 1

Content

Understanding Computers

This is a theoretical unit covering the basic principles of computer systems architecture.

Networks

This unit enables pupils to understand the basic principles of networking architectures.

Concepts and Skills

- Elements of a computer system, the CPU, understanding binary, binary addition, storage devices, convergence and new technologies.
- Understanding the internet.
- Types of connectivity.
- Network topologies.
- Use of encryption.

TERM 2

Spreadsheet Modelling

This unit builds on pupil's skills in the creation of financial models.

Computational Thinking

An introduction to the world of computational thinking and logic. Students get to understand the power of problem solving and the different methods that Computer Scientists use to tackle problems.

- Spreadsheet modelling.
- Use of formulae & functions for arithmetic.
- Conditional formatting & validation.

- Logical thinking
- Logic gates
- Algorithmic thinking
- Abstraction / decomposition

TERM 3

Developing for the Web

This unit equips pupils with the knowledge & skills needed to develop web based products.

Introduction to Python

This unit further develops pupil's knowledge & skills in their use of Python.

- Introduction to web based products.
- Home screens, navigation & links.
- Images, map functions & publishing.

- Use of strings & variables.
- Programming numbers & arithmetic.
- Writing algorithms that include selection.
- While loops & searching.

