Computing

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

	Content	Concepts and Skills
TERM 1	**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.	• 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. **Introduction to Python** This unit further develops pupil's knowledge & skills in their use of Python.	• Spreadsheet modelling. • Use of formulae & functions for arithmetic. • Conditional formatting & validation. • Use of strings & variables. • Programming numbers & arithmetic. • Writing algorithms that include selection. • While loops & searching.
TERM 3	**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. **Developing for the Web** This unit equips pupils with the knowledge & skills needed to develop web based products.	• Logical thinking • Logic gates • Algorithmic thinking • Abstraction / decomposition • Introduction to web based products. • Home screens, navigation & links. • Images, map functions & publishing.

Archdiocese of Liverpool