



Curriculum Overview

Curriculum Area: Computing Year: 9

Year 9 Curriculum:

Autumn Term A: Python programming with sequences of data

This unit introduces pupils to how data can be represented and processed in sequences, such as lists and strings.

Autumn Term B: Media animations

In this unit, pupils will discover how professionals create 3D animations using the industry-standard software package, Blender. By completing this unit, pupils will gain a greater understanding of how this important creative field is used to make the media products that we consume.

Spring Term A: Data science

In this unit, pupils will be introduced to data science, and by the end of the unit they will be empowered by knowing how to use data to investigate problems and make changes to the world around them

Spring Term B: Representations – audio visual

In this unit, pupils will focus on making digital media such as images and sounds, and discover how media is stored as binary code.

Summer Term A: Vector graphics

This unit takes pupils on a journey of discovery of techniques that cybercriminals use to steal data, disrupt systems, and infiltrate networks. They will then learn about social engineering and other common cybercrimes, and finally look at methods to protect against these attacks.

Summer Term B: Programming skills with physical computing

This unit applies and enhances the pupils' programming skills in a new engaging context: physical computing, using the BBC micro:bit. In the first half of the unit, pupils will get acquainted with the host of components built into the micro:bit, and write simple programs that use these components to interact with the physical world.

Links to National Curriculum

Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms, and data representation

Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems

Create, reuse, revise, and repurpose digital artefacts for a given audience, with attention to trustworthiness, design, and usability

Undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users

Understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits

Understand a range of ways to use technology safely, respectfully, responsibly, and securely, including protecting their online identity and privacy; recognise inappropriate content, contact, and conduct, and know how to report concerns.

Knowledge and understanding of this curriculum will be assessed by:

Summative assessment at the end of each unit

Formative assessment throughout lessons

Powerful Knowledge/Cultural Capital Opportunities

In Computing, all pupils will be taught to be courteous, respectful users of technology, who are responsible, competent and confident and creative users of information and communication technology at the highest level suitable for the future world society. All pupils will be equipped to use Computational Thinking and problem-solving skills and take them into the workplace as individuals who are computer literate and active participants in the digital world.