INFORMATION TECHNOLOGY

Year 8

What are the aims and intentions of this curriculum?

The aim of our Key Stage 3 Curriculum is to ensure students experience a broad and balanced experience in ICT and computer science which prepares them effectively for the workplace and their future careers. The curriculum offers an approach which incorporates teaching specific software applications which students may experience in the workplace, ensuring they can understand and apply the fundamental principles and concepts of computer science. Students are taught to analyse problems in computational terms and have repeated practical experience of writing computer programs in order to solve such problems. They can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems and ultimately become responsible, competent, confident and creative users of information and communication technology.

Term	Topics	Knowledge and key terms	Skills developed	Assessment
Autumn 1	**Computer Networks and Internet**	• MS Office 365 • Network Hardware • Hub, switch and router • Benefits and problems of Network **Useful Online Resources:** https://www.bbc.co.uk/bitesize/subjects/zvc9q6f https://teach-ict.com/index.html	Understand the hardware and software components that make up computer systems, and how they communicated with one another and with other systems. Create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability. Computer Networks - Advantages / Disadvantages of Networks - Local Area Networks (definition and hardware required) - Wide Area Networks (definition and hardware required) - Data Packets and the Internet - DNS and the Internet.	A written assessment made up of exam style questions covering the all aspects of the unit. This will be carried out at the end of the unit (approx. at the end of the half-term).
Autumn 2	**Binary Numbers**	• Understanding binary numbers • Converting Denary numbers to binary and vice versa. **Useful Online Resources:** https://www.bbc.co.uk/bitesize/subjects/zvc9q6f https://teach-ict.com/index.html	Understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers (for example, binary addition, and conversion between binary and decimal) Binary Bits and Bobs - The Binary Number System - Binary – Denary Conversions - Binary Addition - Binary Representation of Text - Binary Representation of Images - Binary Representation of Sound.	A written assessment made up of exam style questions covering the all aspects of the unit. This will be carried out at the end of the unit (approx. at the end of the half-term).

Spring 1	**Python – Introduction, Drawing, List**	• FOR loops • Functions • Understanding Syntax **Useful Online Resources:** https://www.bbc.co.uk/bitesize/subjects/zvc9q6f https://teach-ict.com/index.html https://repl.it/	Use of programming language, which is textual, to solve a variety of computational problems. Outputs - Inputs and Variable Storage – IF Statements Advancing Knowledge: - FOR Loops - WHILE Loops Problem Solving (Abstraction and Decomposition) Tasks.	A written assessment made up of exam style questions covering the all aspects of the unit. This will be carried out at the end of the unit (approx. at the end of the half-term).
Spring 2	**Scratch Games**	• Creating Variables • Adding Scores • Understanding the basics of games • Using operators **Useful Online Resources:** https://www.bbc.co.uk/bitesize/subjects/zvc9q6f https://teach-ict.com/index.html	Use of programming language, which is textual, to solve a variety of computational problems. Scratch Shooter Game Maker: - Designing Interfaces, Gameplay (and progression) and Algorithms - Code Development, Alpha Testing and Debugging - End-User Testing and Evaluations.	A written assessment made up of exam style questions covering the theoretical aspects of the unit (to be carried out at the end of the unit) In addition to this there will be an extended project, assessing the use of the practical HTML skills taught on the course. This will be an ongoing assessment throughout the second half of the unit.
Summer 1	**HTML & CSS**	• Creating simple web page • Using HTML Tags • Formatting HMTL code • Designing a webpage using CSS **Useful Online Resources:** https://www.bbc.co.uk/bitesize/subjects/zvc9q6f https://teach-ict.com/index.html	Use of programming language, which is textual, to solve a variety of computational problems. • Introduction to HTML • Basic Tags • Heading • Horizontal Rule • Paragraphs - Fonts - Body (and it's properties) - Images – Hyperlinks.	A written assessment made up of exam style questions covering the theoretical aspects of the unit (to be carried out at the end of the unit) In addition to this there will be an extended project, assessing the use of the practical HTML skills taught on the course. This will be an ongoing assessment throughout the second half of the unit.
Summer 2	**Representing Data**	• Pixels • Understanding bitmap • Representing images in pixel • Representing sound using binary **Useful Online Resources:** https://www.bbc.co.uk/bitesize/subjects/zvc9q6f https://teach-ict.com/index.html	Understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits • Students can explain the term "Animation". • Students can identify different animation techniques. • Students can use appropriate software to produce an animation for a specific audience and purpose.	Practical and Written Animation production task.