

Computer Science and IT Year 8 Curriculum Map

Baseline Assessment – This will show the key skills you have developed in Computer Science and understanding of Computing Curriculum			
Term	I am learning	By the end of this topic I will be able to	Assessment
Autumn	Spreadsheets (KS3 links 1.6 and 1.8): <ul style="list-style-type: none"> – The use of spreadsheet software to model real world situations – Understand the difference between entering text and numbers using different formatting options to display the data. – The difference between formula and functions – Add conditional formatting to a spreadsheet. – Advanced filtering criteria – Use graphs to change, edit and compare results. 	<p>By completing this unit students will learn how to create and format a spreadsheet.</p> <p>They will also learn basic calculations and formulae. Students will learn how they can use spreadsheets in the real world and then model a spreadsheet for an intended purpose.</p>	<p>Data modelling a spreadsheet</p> <p>A Microsoft Forms assessment made up of exam style questions covering all aspects of the unit. This will be carried out at the end of the unit</p>
	Database (KS3 links 1.2,16 and 1.7) <ul style="list-style-type: none"> – Data Types – Handling Data – Setting up a database – Relational databases – Data Input – Use of Forms – Queries / Switchboard – Reports / Labels / Mail Merge 	<p>This unit starts to look at how databases are created and how we can use them to model data – this unit builds on past knowledge gain in the spreadsheet unit . By the end of the unit pupils will understand how data in a table and a form are linked together to create queries</p> <p>Create a calculated query and explain why we use primary key in tables and how they are useful to people using databases.</p> <p>Pupils will gain an understating of data types and add validation to a database and explain why it is used.</p>	<p>Data modelling</p> <p>Creating Databases</p> <p>A Microsoft Forms assessment made up of exam style questions covering all aspects of the unit. This will be carried out at the end of the unit</p>

Spring	<p>Computer Crime (KS3 link 1.9):</p> <ul style="list-style-type: none"> – Identify common types of computer crime. – Recognize the signs of fraudulent emails. – Computer Misuse Act. – ways to protect yourself from malware and hacking. – Be aware of the possibility of identity theft. – Be aware of who might hold personal data about you. – Know how to minimize the chance of identity theft. – Learn about Copyright law. – Understand the damage that illegal copying does to individuals, companies and society. 	<p>This unit covers some of the legal safeguards regarding computer use, including overviews of the Computer Misuse Act, Data Protection Act and Copyright Law and their implications for computer use.</p> <p>Phishing scams and other email frauds, hacking, “data harvesting” and identity theft are discussed together with ways of protecting online identity and privacy.</p> <p>Health and Safety Law and environmental issues such as the safe disposal of old computers are also discussed.</p>	<p>A Microsoft Forms assessment made up of exam style questions covering all aspects of the unit. This will be carried out at the end of the unit</p>
	<p>Introduction to Python (KS3 links 1.1, 1.2 and 1.7):</p> <ul style="list-style-type: none"> – Outputs – Inputs and Variable Storage – IF Statements – Problem Solving (Abstraction and Decomposition) Tasks 	<p>Pupils start to build on the skills gained in their block-based unit – Scratch. You will start to write code using a new text-based language.</p> <p>The focus is on getting students to understand the process of developing programs, the importance of writing correct syntax, being able to formulate algorithms for simple programs and debugging their programs.</p> <p>This unit introduces students to the basics of programming using the Python programming language.</p> <p>Students will learn about the following: Print, Loops, Variables, If Statements and Else Statements</p>	<p>Python program</p> <p>A Microsoft Forms assessment made up of exam style questions covering all aspects of the unit. This will be carried out at the end of the unit</p>

Summer	Binary (KS3 links 1.4 and 1.6): <ul style="list-style-type: none"> – The Binary Number System. – Binary – Denary Conversions. – Binary Addition. – Binary Representation of Text. 	<p>Pupils will understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers</p> <p>Understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits</p>	<p>A Microsoft Forms assessment made up of exam style questions covering all aspects of the unit. This will be carried out at the end of the unit</p>
	Multimedia (KS3 links 1.7 and 1.8): <ul style="list-style-type: none"> – Create re-use, revise and re-purpose digital artefacts for a given audience. – Undertake creative projects that involve selecting, using, and combining multiple applications. 	<p>In this unit students will be able to use graphic editing software to create and edit graphics.</p> <p>Students will practice skills in design, photo editing and image manipulation to create a poster using a suitable graphics package.</p>	<p>Digital Image Poster</p> <p>A Microsoft Forms assessment made up of exam style questions covering all aspects of the unit. This will be carried out at the end of the unit</p>

Computing and IT Key Stage 3 Curriculum Links

	Content	Year	Unit
1.1	Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems.	7, 8 & 9	Scratch/Python/Flowol <i>[Computer Science]</i>
1.2	Understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem.	7, 8 & 9	Scratch/Python/Advanced Python/Binary/Database <i>[Computer Science]</i>
1.3	Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions.	7, 8 & 9	Scratch/Python/Advanced Python <i>[Computer Science]</i>
1.4	Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; 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].	8 & 9	Binary/Data Representation/ Logic Gates <i>[Computer Science]</i>
1.5	Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems.	7 & 8	Networks/Technology /Back to the Future/Computer Crime <i>[Computer Science]</i>
1.6	Understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits.	7, 8 & 9	Technology/ Binary/ Data Representation/Spreadsheets/Database <i>[Computer Science & IT]</i>
1.7	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.	7, 8 & 9	Spreadsheets /Multimedia Project/ Scratch/Python/Database/ Web Development <i>[Computer Science & IT]</i>
1.8	Create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability.	7, 8 & 9	Multimedia Project/ Back to the Future/Computer Crime/E-Safety/Web Development <i>[Computer Science & IT]</i>
1.9	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.	7 & 8	E-Safety/Computer Crime/Web Development <i>[Computer Science & IT]</i>