

Key Stage 3

Year 7 Computer Science and IT Learning Map.

Baseline Assessment – This will show the key skills you have developed in Computer Science at Key Stage 2			
Term	I am learning	By the end of this topic I will be able to:	Assessment
Autumn	<p>Computer Literacy - Introduction to using computers at Holy Family:</p> <ul style="list-style-type: none"> – School Rules – Logins/Passwords – Resources – OneDrive - Files and Folders 	<p>By completing this unit students will become more socially aware of the school's network and how to fully use it to improve their learning across the whole school community.</p>	
	<p>E – Safety (KS3 link 1.9):</p> <ul style="list-style-type: none"> – How to stay safe when using social networking websites. – The dangers of cyberbullying – Identify trustworthy and untrustworthy websites – How search engines work – Tools to “search smarter” – What Copyright Law is and how to use other peoples’ ideas/work without breaking copyright law. – The dangers that are online and how to stay clear of these dangers. 	<p>This unit prepares students to become e-safety ambassadors at Holy Family.</p> <p>Students will create several creative documents (Presentations, Posters, and Leaflets) to promote staying safe on technology and understand a range of ways to use technology safely, respectfully, responsibly, and securely, including protecting their online identity.</p>	<p>Presentation Poster 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>Scratch (KS3 links 1.1, 1.2 and 1.7):</p> <ul style="list-style-type: none"> - Designing Interfaces, Gameplay (and progression) and Algorithms - Code Development, Alpha Testing and Debugging - End-User Testing and Evaluations 	<p>By completing this unit students can apply concepts such as sequencing, selection, abstraction, and iteration to a game in Scratch.</p> <p>They will be applying their knowledge of skills learned, to create a game specified by the teacher.</p>	<p>An extended project assessing the full development process of coding a computer game:</p> <ul style="list-style-type: none"> - Design - Development - Testing - Evaluation <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>Hardware and Software - Inside the Computer (KS3 1.5 ad 1.6):</p> <ul style="list-style-type: none"> - What a computer is and how it can come in various forms. - How computers receive commands and data. - How computers can output information. - A computer is made up of a range of components/ the purpose/function of these components. - The role of the CPU, RAM, and Hard Drive. What the CPU is, how it works, and how its performance is measured. 	<p>In this unit, students will learn about the fundamentals of how a computer system operates.</p> <p>Students will learn about the hardware, software, and memory of a computer system.</p> <p>Pupils will have the opportunity to take apart a computer and identify the key components</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	<p>Networks (KS3 link 1.5):</p> <ul style="list-style-type: none"> - 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. 	<p>Students will learn about Networks and how computers/nodes are connected.</p> <p>Pupils will learn how a network is connected through topologies and the advantages and disadvantages of these.</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>Back to the future (KS3 link 1.5):</p> <ul style="list-style-type: none"> - George Boole – Boolean Logic - Tim Berners-Lee – HTML and WWW - Charles Babbage – The Difference Engine and Problem Solving - Alan Turing – Code Breaking 	<p>This unit will pupils to be able to apply problem-solving concepts and understand how Boolean logic and HTML have developed.</p> <p>Pupils will identify and explain how the use of past, modern, and future technology can influence society. Debate the impact of particular technology innovations in the past, present, and future concerning legal, moral, and ethical values.</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 behavior of real-world problems and physical systems.	7, 8 & 9	Scratch/Python/Flowol [Computer Science]
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 [Computer Science]
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 [Computer Science]
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,	8 & 9	Binary/Data Representation/ Logic Gates [Computer Science]

	and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal].		
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 [<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/ App 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/App 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/App Development [<i>Computer Science & IT</i>]