Key Stage 4: Computer Science 2022-23

Prior Learning:

At KS3 the aim was for students to study the following areas:

- The everyday IT and Computational skills we need to be 21st Century workers in the Digital Age (Email, E Safety, Presenting Information, Files and Documents, Spreadsheets, Research Skills)
- Key programming concepts and skills development (Sequence, Selection, Iteration, Flowcharts and Algorithms, Python Programming Language)
- Wide ranging theoretical understanding (Binary, Logic Gates, Networking and the Internet)

Curriculum Intent:

IT/ Computing at Chantry Academy provides each child with the framework students for **real world application** of the skills they have been taught no matter what career path they take. Each student will develop the 21st century skills to **innovate**, **create** and succeed. It will enable them to have the understanding, skills and passion to change the world around them.

Year 10

	Autumn Term 1 7 weeks	Autumn Term 2 7 weeks	Spring Term 1 6 weeks	Spring Term 2 6 weeks	Summer Term 1 6 weeks	Summer Term 2 7 weeks
Module Title	**Systems Architecture and Programming**	**Memory and Storage and Programming**	**Computer Networks and Security**	**Algorithms and Programming**	**Recapping**	**Programming**
Learning Focus	Learning about the hardware components of a CPU, how they work together for the function of a working Computer System. Students will also learn the basic components of the Python Programming Language	Students will learn about the types of Computer memory and how computers represent images, sounds and characters. Students will also focus on learning binary mathematics and continue to develop their knowledge of programming.	Students will learn about the networks, the internet and the different threats that are posed on the internet	Students will learn about different searching and sorting algorithms used in computer programming. Students will learn about the use of Subprograms in computer programming	Students will revisit all topics covered in Year 10 to ensure understanding	Studetns will continue to learn key programming concepts and structures for their exams
Careers Focus	Computer Technician, Computer Architecture Designer, Programmer, Software Developer		Network Manager, Network Technician, Cyber Security, Programmer, Software Developer		Programmer, Software Developer	

Assessment	Components of a Computer System Test (Section 1 and 2)	Networks and Security Test (Section 3, Review Section 1)	Paper 1 PPE Paper 2 PPE

Year 11					
	Autumn Term 1 7 weeks	**Autumn Term 2 7weeks**	**Spring Term 1 6 weeks**	**Spring Term 2 6 weeks**	**Summer Term 1 6 weeks**
Module Title	**Boolean Logic and Systems Software**	**Programming Languages and IDEs, Robust Programmes**	**Paper 1 Recap**	**Paper 2 Recap**	**Revision**
Learning Focus	Students will learn about Boolean logic gates and how to use and apply them as well as learn about the different types of software that keep the computer running and operating efficiently.	Studetns will learn the importance of IDE's in computer programming the different types of languages used. Students will work on how to protect their programs from inappropriate use	Focus of revision for the Paper 1 exam	Focus on the revision for the Paper 2 exam	Revision of key aspects
Careers Focus	Computer Technician, Computer Architecture Designer, Programmer, Software Developer		Computer Technician, Computer Architecture Designer, Programmer, Software Developer		
Assessment	Programming Test (Review Section 1 and 2) PPE (1 Paper)		PPE2		