Curriculum Overview- Computer Science- Hermitage.

	Autumn	Spring	Summer
Year 7	**E-Safety** including cyber bullying and digital footprints. **Office Skills** including email, Teams and online systems use.	**E-Safety** including cyber bullying and digital footprints. **Introduction to Computer Systems** including hardware, software, storage devices, networks and network security.	**E-Safety** including cyber bullying and digital footprints. **Photo Editing** including image manipulation in the media and using skills learnt to create an image based on a given scenario. **Scratch**, a block-based visual programming language where students learn coding concepts and develop a game based around the classic PONG theme.
Year 8	**E-Safety** including body image and social media. **Intermediate Computer Systems** including binary, sorting algorithms, network topologies, computer logic and data representation.	**E-Safety** including body image and social media. **Vector Graphics** including digital graphic properties, branding and image editing skills. **Cyber Security**, discovery of techniques that cybercriminals use to steal data, disrupt systems, and infiltrate networks.	**E-Safety** including body image and social media. **Game Maker**, a high-level visual programming language where students learn coding concepts, basic scripting and develop a maze game of their own theme, similar to that of PAC MAN.

Year 9	**E-Safety** including grooming, inappropriate content and messaging. **Python Programming** including sequence, selection, iteration and string manipulation.	**E-Safety** including grooming, inappropriate content and messaging. **Interactive Multimedia Products**, students design and create a product for a given scenario, including video, sound, and animation. **Photoshop** including image manipulation in the media and using skills learnt to create an image based on a given scenario.	**E-Safety** including grooming, inappropriate content and messaging. **Digital Literacy Skills**, students will be empowered with knowledge and skills to enable them to be exceptional digital citizens of today's digital world.
Year 10	**Systems architecture** including the CPU, its purpose and how it impacts performance, Von Neumann Architecture and embedded systems. **Memory and storage** including primary, secondary, units, data representation and compression.	**Programming fundamentals** including sequence, selection, iteration and string manipulation. **Computer networks**, connections and protocols including types of factors effecting the performance of hardware required for networks. Also, network topologies and methods of connection. **Network security** including threats to computer systems and how to protect against vulnerabilities.	**Ethical, legal, cultural & environmental impacts of digital technology**. **Programming fundamentals** including sequence, selection, iteration and string manipulation.

		Systems software including both operating, application and utility software.	
Year 11	**Algorithms** including computational thinking, designing algorithms, and common searching and sorting algorithms. **Producing robust programs** including authentication, testing and defensive design. **Boolean logic** including logic gates and truth tables **Languages and IDEs** including high and low level languages.	**Component 1 and 2 revision**	**Component 1 and 2 revision**
Year 12	**Unit F164: Website Development** Including website principles and the components of web pages. Students will learn how to plan, design, create, and test website prototypes that can be viewed on a range of devices. This unit teaches you how to use a variety of	**Unit F160: Fundamentals of application development** Including different stages that developers go through to produce a working software application, how developers scope application requirements, and the design features which make applications intuitive for users.	**Unit F163: Game development** Including how types and genres of digital games and their characteristics affect game design. Students will learn how to plan, design, create, and test game prototypes using software such as Game Maker.

	languages, frameworks and libraries in website development.		
Year 13	**Unit F161: Developing application software** Including implementation methodologies and the areas that need to be considered when applications are being developed for different platforms.	**Unit F162: Designing and communicating UX/UI solutions** In this unit you will learn the principles of User Experience(UX) and User Interface (UI) design and what makes an interface easy to use. You will learn tools and techniques to plan UX/UI solutions and how to design high-fidelity prototypes of UX/UI solutions. You will also learn how to communicate effectively with clients.	