#WeAreCyberSafe

Throughout the year Year 9 students will have one off cyber safety lessons which will cover the following topics, cyber safety will also be discusses during the units :

- The dangers of the dark web
- Dangers of online gaming
- How to use social media safely

Curriculum Overview for Information Technology and Computing - Year 9				
When?	**What?**	**Why?**	**How?**	**Support**
Summer Half Term - 2	**Computer Systems**	This unit develops students' understanding about computer systems. Students have previously studied a similar computer systems unit in year 7, which this unit recaps and also develops from. In year 8, they learned about the programming and the way users interact with the process in various ways, and in this lesson they will learn how devices interact with other devices, and products produce outputs given inputs. This topic develops their understanding to prepare them for GCSE Computer Science.	The units develops students understanding in the following key areas of computer systems: ● Hardware ● The CPU ● Memory and Storage ● Logic gates ● Software The student's understanding develops from them being able to identify the different aspects of computer systems, to being able to analyse, explain and justify different choices of computer systems.	Understanding that different systems are needed for different purposes is essential for success in this unit. Knowledge of the internal components of a computing system is core to understanding why different computers have different jobs. This website will give a quiz to help understand starting points Quiz site

Autumn Half Term - 1	**Computational Thinking & Programming**	This unit will cover the cornerstones of computer science - decomposition, abstraction, pattern recognition and algorithms. Often programming is thought of as an unnecessary skill except for those going into the industry. However, the skills students learn also include: ● *Perseverance* ● *Problem Solving* ● *Error Checking* ● *Adaptation* ● *Experimentation* ● *Creativity* ● *Decomposition* *...and many more.*	Students are given a chance to work at their own pace through a programming project. This will be moving on from the programming students would have completed in Year 8 to advance their skills. Most students will be using Python textbased language to make their code. They will learn programming principles such as: ● *Sequencing* ● *Variables* ● *Conditional Statements* ● *Loops* ● *Lists/Arrays*	Programming units can be practised at home on a variety of different online platforms. These include: ● pythonschool.net ● learnpython.org ● codeacademy.com Perseverance as a skill is something that students often lack the confidence to pursue. In computing things often go wrong and the best programmers are never those who do things correctly first time, they are those who learn from their mistakes. This is something we hope that parents will help students to understand about our subject.
Autumn Half Term - 2	**Web design and Photoshop**	This unit develops students skills in contextual design based on audience and purpose. This unit provides students with websites skills which will help with iMedia and T Level Digital.	Students will gain an understanding of what web design creating a multipage website that is suitable for the target audience By the end of the unit students will be able to create a 4 page website focussing on Cyber Safety	Students will benefit greatly from understanding what makes an effective website. The should spend time The documenting of idea plans are essential to this unit and development overall. Students who perform best in this unit will be those with the best plans, not necessarily the best ideas. Student may also want to practise their photoshop skills at home using the very similar site photopea

Spring Half Term - 2	**Cyber Security**	With growing cases of identity and data theft and new laws being designed to combat these threats, it is important for students to be able to identify how to be vigilant against them. Being able to spot when something is not right is an important skill and one that will be developed throughout this unit.	Students will investigate the main types of security threats that have developed following the rise of digital devices and apps. They will investigate the following: ● *Phishing* ● *Pharming* ● *Identity fraud / theft* ● *Network intrusion* ● *Social engineering*	The concepts in this unit can be difficult to grasp for some students and the potential threats can be difficult for students to fully appreciate. These websites will help with understanding of the types of security threats: • Identity Theft • Fundamentals of cyber security
Spring Half Term - 2 to Summer Half Term 1	**Physical Computing**	Physical computing allows students to engage in hands-on learning experiences that bridge the gap between the digital world and the physical world. It provides students with tangible, real-world applications for the knowledge they gain in other subjects like maths, science, and computer programming. It also develops their problem solving skills, creativity and innovation.	In this unit students will be able to get hands on with the departments Pi-Top raspberry pi powered computers. This will give students the opportunity to develop their coding skills to control physical devices e.g. lights, buzzers and sensors.	If students want to find out more about physical computing, the Raspberry Pi foundation website has lots of information and tutorials to explore.