Curriculum Overview for Information Technology and Computing - Year 7				
When?	**What?**	**Why?**	**How?**	**Support**
Autumn Half Term - 1	**Introduction to the Network**	We will be providing students with the skills and software knowledge they will need to be able to focus on the content of computing lessons, rather than how to use the systems at school. Students should be gaining a sense of ownership over the subject and feel confident in what they will be expected to do within lessons.	Students will be introduced to how IT and Computing lessons are run and what is expected of them in lesson. They will also be provided with the basic skill set they need to be successful in the subject. Systems studied: ● *The School Network* ● *Google Mail* ● *Google Drive* ● *Google Classroom* ● *Class Charts*	In each of the boxes below, there are different strategies for you to help support students that relate to ***every unit.*** This half term preparation is particularly important by practising logging in to ensure lessons are more efficient. Homework during this half term will be focused on students logging into Google Mail and using Google Drive and Google Classroom to complete and hand in pieces of work.
		This unit will secure learning that will underpin how the entire school will be providing work. ***Students will learn how to ensure their learning is consistent across the entire school and will ensure even working from home will be efficient and worthwhile.***		
Autumn Half Term - 2	**Research and presentation of Information**	Students will need to prefect finding information and discerning this from misinformation. The crux of all computing is; taking input, processing it and then presenting it for others to understand. This unit will allow students to understand where to find information and how to correctly use the software needed to show others	This unit is a mix of practical and theoretical skills that result in efficient and accurate use of the main internet search engines. Resulting in skills for presenting information accurately and confidently. Topics covered: ● *Searching for information* ● *Boolean search operators* ● *Spotting mis-information* ● *Presenting information to the correct audience* ● *Using features to enhance data presentation*	In computing lessons students will be using an *'eBook'* (an online version of an exercise book) where students make notes, complete work, complete homework and revise from. eBooks can be accessed via *Google Classroom*. Students should look to check the work they have undertaken in lessons and check their understanding. eBook allows students to check their work anywhere they have an internet connection. To support students, you could check their understanding of the content of their eBook. If they are not sure of anything from the lesson, please contact the department.

Spring Half Term - 1	**Data Representation - Images**	In this theory unit students will learn about how data is used within the computer systems from the previous unit. Data includes any letters, numbers, symbols, sounds and images. These are all stored on and sent between devices that we all use every day.	Students should be able to understand the basics about how computer systems store and send data, as well as more technical details. Skills with programs that manipulate images will also be a bedrock of this unit This unit will fall into: ● File Sizes ● Compression ● Binary ● Images ● Skills in Photoshop	Students often find linking what they have done in lesson to real life difficult. All the units in computing topics are based on knowledge students need to be able to use any digital device effectively, as well as some more technical information. You can support students by showing them how the knowledge they learn in lessons can be seen in life outside of school. In all units, students will be given a grid with all of the knowledge they should be able to demonstrate at the end of a topic. Students can self-assess on this grid and any areas they are struggling with should be the focus of their homework and class time.
Spring Half Term - 2	**Photoshop Skills**	Often, the manipulation of images is thought of as an unnecessary skill except for those going into the industry however the skills students learn also include: ● *Perseverance* ● *Problem Solving* ● *Correct tool use and selection* ● *Creating files for different audiences*	Students are given a chance to work at their own pace through the work for a project. They will understand what impacts quality and size of a file and how to best use tools to get the correct results They will learn image manipulation principles such as: ● *Clone Stamp tools* ● *Layer manipulation* ● *Saturation changes* ● *Colour and Hex mapping*	Students will be given the core and base skills and will need to work their way through challenges and tutorials to create a final project piece of their choice. There will be a teacher with them at each point, guiding and clarifying. Each lesson will have a different core focus that will extend understanding of each skill and allowing for time for students to practice and integrate their new knowledge into their work.

Summer Half Term - 1	**Computational Thinking**	Students are faced with problems each and every day. Usually, there are defined ways to solve these problems. When the efficient methods are explored by students, they very quickly understand how to apply the way a computer solves a problem to other subjects. Techniques include: • *Abstraction* • *Pattern Recognition* • *Decomposition*	Students firstly learn how a computer is instructed to solve problems and follow instructions. The core of this unit is based around the knowledge that all computing is completed using defined algorithms. Students will be presented with problems and will be required to use the identified techniques to solve problem	At the end of each unit, students will have some time working on 'how to revise' and will be set a revision homework. They should be aiming to find the method of revision that works best for them and help them perform to their best ability in each subject, not just IT and Computing. As with every unit, students will be tested on their knowledge at the end of each unit. All notes should be written in their eBook, however additional information on each subject can be found on websites: www.teach-ict.com/2016/ks3/ks3_home (**Username:** NR70XS **Password:** memory8)
Summer Half Term - 2	**Programming**	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. Programming at primary level may have involved the use of 'unplugged' lessons, where they learn computing concepts without the computer. Now at secondary school students will be putting these concepts into action using a program called Scratch. They will learn programming principles such as: • *Sequencing* • *Variables* • *Conditional Statements* • *Loops*	Programming units can be practiced at home on a variety of different online platforms. We will be using: • scratch.mit.edu eBook can be accessed via *Google Classroom*. 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.