

Curriculum Overview for Information Technology and Computing - Year 9

When?	What?	Why?	How?	Support
Autumn Half Term - 1	Programming	<p>Often programming is thought of as an unnecessary skill except for those going into the industry. However, the skills students learn also include:</p> <ul style="list-style-type: none"> ● <i>Perseverance</i> ● <i>Problem Solving</i> ● <i>Error Checking</i> ● <i>Adaptation</i> ● <i>Experimentation</i> ● <i>Creativity</i> ● <i>Decomposition</i> <p>...and many more.</p>	<p>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.</p> <p>Most students will be using Python text-based language to make their code.</p> <p>They will learn programming principles such as:</p> <ul style="list-style-type: none"> ● <i>Sequencing</i> ● <i>Variables</i> ● <i>Conditional Statements</i> ● <i>Loops</i> ● <i>Lists/Arrays</i> 	<p>Programming units can be practised at home on a variety of different online platforms. These include:</p> <ul style="list-style-type: none"> ● pythonschool.net ● learnpython.org ● codecademy.com <p>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.</p>
Autumn Half Term - 2	Digital Presentation Quiz	<p>Students will need different skills throughout KS4 depending on which options they choose. Most subjects require the ability to create products that send messages or give points of information.</p> <p>This unit will give the skills needed to engage users with interactivity.</p>	<p>Students will be using this time to develop an understanding of the requirements of the creative iMedia course and the process for documenting plans.</p> <p>They will use the following features:</p> <ul style="list-style-type: none"> ● <i>Hyperlinks</i> ● <i>Buttons</i> ● <i>Sounds</i> ● <i>Scoring system</i> 	<p>This work can be challenging as we start investigating industry standard planning skills. This will be the time to understand the need for rigorous testing of products to ensure usability for the intended audience.</p> <p>Students traditionally struggle with creating products that appeal to their target audience and meet the purpose of their design briefs.</p> <p>Taking the time to fully understand the requirements and then evaluate against them is essential for success.</p>

<p>Spring Half Term - 1</p>	<p>Desktop Publishing</p>	<p>Students will need different skills throughout KS4 depending on which options they choose. Most subjects require the ability to create products that send messages or give points of information.</p> <p>This unit will give the skills to professionally present information that pulls in data and resources from other products.</p>	<p>Students will be using this time to develop an understanding of the requirements of the IT BTEC course and the process for using the correct programs for the correct jobs.</p> <p>They will use the following features:</p> <ul style="list-style-type: none"> ● <i>Importing Images</i> ● <i>Importing text</i> ● <i>Embedding tables and graphs in digital documents</i> 	<p>Understanding which program to use for which task is a skill which can take a while to develop. It is essential that students understand that different products have different purposes. Despite the fact that a product <i>can</i> do something, there may be another program which has better tools or can do it better.</p> <p>Knowing how data is stored, used and processed in different products will be a huge benefit for this unit.</p> <p>Office applications</p>
<p>Spring Half Term - 2</p>	<p>HTML</p>	<p>With so much emphasis being put into the emerging technologies of apps and web pages, an underlying knowledge of how these things are built is essential to the progression of computing excellence.</p> <p>The way information is presented is central to how well people understand it. This unit will help students understand how to layout information succinctly and clearly.</p>	<p>Students will be creating basic web pages that will reflect how data and information is presented. They will investigate and use the following technologies to improve their websites:</p> <ul style="list-style-type: none"> ● <i>HTML (Hypertext markup Language)</i> ● <i>CSS (Cascaded Style Sheets)</i> ● <i>JS (JavaScript)</i> 	<p>This can be a challenging unit for students. The best thing to understand at the early stage is how to open and close HTML tags. e.g.</p> <pre><head> This is in the head section </head></pre> <p>This website will be a good place to start interacting with HTML</p>

<p>Summer Half Term - 1</p>	<p>Cyber Security</p>	<p>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.</p> <p>Being able to spot when something is not right is an important skill and one that will be developed throughout this unit.</p>	<p>Students will investigate the main types of security threats that have developed following the rise of digital devices and apps.</p> <p>They will investigate the following:</p> <ul style="list-style-type: none"> ● <i>Phishing</i> ● <i>Pharming</i> ● <i>Identity fraud / theft</i> ● <i>Network intrusion</i> ● <i>Social engineering</i> 	<p>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.</p> <p>These websites will help with understanding of the types of security threats:</p> <ul style="list-style-type: none"> ● Identity Theft ● Fundamentals of cyber security
<p>Summer Half Term - 2</p>	<p>Networking and Physical Computing</p>	<p>For computer systems to work effectively they must be able to communicate with each other.</p> <p>The internet is the largest form that everyone will need to purchase and be able to understand in their lives.</p> <p>Networks are smaller and more business centred however, students use a network every day at school.</p>	<p>Students will focus on the infrastructure of networks and longer answer questions that students are asked to answer in mostly GCSE subjects.</p> <p>Network security for companies is another learning focus, trying to help students understand more about the threats of cyber criminals to businesses and individuals.</p>	<p>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 & Computing.</p> <p>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 such as:</p> <ul style="list-style-type: none"> ● www.bbc.co.uk/education/subjects/zvc9q6f ● www.teach-ict.com/2016/ks3/ks3_home <p>(Username: NR70XS Password: memory8)</p>