Digital T Level Transition Work June 2020

For each subject you will receive a detailed introduction to allow full transition into the college and your new learning. Please complete the weekly tasks outlined below and attend the meet sessions with the teachers for further guidance and information. Please keep all work created in a folder to present to me in the first lesson in September.

Computer Science A Level	Google Classroom Code:	Google Meet code:
	qykkjhe	This will be linked on Google Classroom

Weekly Tasks	Topic	Resources
W/C 1.6.20	Components of a Computer	Using a website like: https://www.overclockers.co.uk/ https://www.ebuyer.com/ You need to pick the components to build a gaming PC working to a budget of £1000. The components will include a suitable a case, motherboard, CPU, RAM, secondary storage, Graphics card, power supply You will also need to purchase peripherals including a keyboard, monitor and mouse along with a software license for Windows 10. For each component and peripheral you will need to justify why you have purchased each one, considering it's performance against the cost.
W/C 8.6.20	Take a MOOC	Udemy offers lots of fantastic courses specific to computer science. This week I would like you to set up a Udemy account and take an online course. This could be anything related to computer science, for example: • Learning a new programming language • Networking (e.g. Cyber Security) • Data Science (or Data Analytics) When choosing your course, remember to set the filters to choose something between 1 to 3 hours that is free. There are a number of filters such as difficulty which will help you narrow down a suitable course. The website for Udemy is https://www.udemy.com or download the app for your tablet or phone. You will need to write a short summary to explain what the course was about and what you learned.

W/C 15.6.20 W/C 22.6.20	Programming in Python	In your GCSE course you have become very skilled in programming in python. However, the language still has many features which we have not touched upon yet. Using the following website: https://www.learnpython.org/ You can pick any of the activities that you feel will challenge you to learn something new in Python. For each activity I would like you to record the solution by taking a screenshot. This collection of screenshots can then be submitted each week.
W/C 29.6.20	Emerging Technology	Computer science is constantly changing with technology becoming smaller, faster and more powerful every day. In this task I would like you to investigate some of these technologies. Start off by googling the "Gartner Hype Cycle 2019". This will show a graph looking at new technologies and the time it will take for these to become mainstream. Pick one that you would like to investigate and find more about it using Ted talks and/or technology news sites. Examples could include: • AI • Augmented Reality • 5G • Cryptocurrency • Autonomous driving/flying Create a short report/presentation to explain your findings. Things you could include are what the technology is, how it works, the benefits it brings, the issues (including ethical issues) that it may bring.
W/C 6.7.20	Cyber Security and Threats to a network	This challenge is designed to get you thinking like a hacker and is quite a difficult challenge. I would like you to work through the natas wargames challenge on the following website: https://overthewire.org/wargames/natas/natas0.html Each challenge will develop your problem-solving skills to search for the password to move onto the next level. There are additional challenges on the website which you could also try, however this may require you to install some extra software.

Fortnightly Meet: Date & Time	Teacher delivering	Resources
Thurs 4th June 20 9:00am	MP	**Intro to the course** – Discussion on the structure of the course with an insight into what topics will be covered.
Mon 22nd June 20 09:00am	ARE	**Programming** – A recap of Python and some useful libraries which will help you when programming
Mon 6th June 20 9:00am	MP	**Emerging Technologies** -You will need to being your emerging technologies task to share with the rest of the group. We will also a little time looking at the cyber security tasks and how to get set up with these challenges.

General resources and suggested reading:

Specification Link:
https://qualifications.pearson.com/content/dam/pdf/TLevels/digital/digital-production-design-and-development/specification-and-sample-assessments/T_Level_Specification.pdf

Preferred websites:
http://www.teach-ict.com/2016/A_Level_Computing/OCR_H446/OCR_H446_home.html
https://isaaccomputerscience.org/
https://www.youtube.com/channel/UC0HzEBLlJxlrwBAHJ5S9JQg/playlists?view=50&sort=dd&shelf_id=17
https://www.w3schools.com/
https://www.codecademy.com/
https://www.learnpython.org/

Possible additional interest reading: