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| **Year 11 Term 1**  **Cambridge Nationals in IT** | Our mission is to stimulate and challenge our students to excel and provide a desire for lifelong learning and pursue careers in the world of Business, Computing, and ICT. | | | | | |
| **Enquiry Questions: Can everyone use a Human Computer Interface? Or do they have to be literate in using a computer? Why is HCI more energy efficient, even though it requires power?** | | | | | | |
| **Reviewing R050: IT in the Digital World**  In this unit students will learn the theoretical knowledge and understanding to apply design tools for applications, principles of human computer interfaces and the use of data and testing in different contexts when creating IT solutions or products. You will understand the uses of Internet of Everything and the application of this in everyday life, cyber-security and legislations related to the use of IT systems, and the different types of digital communications software, devices, and distribution channels. | | | | | | |
| **Knowledge**  Students will know about… | **Application/Skills**  Students will be able to… | **Vocabulary** | **Home Learning** | **Assessment** | **Extra Resources**  **Extended Reading** | **Cultural Capital** |
| **Students at this stage will be reviewing the content of R050 in preparation for their mock exam.**  **R050: Topic Area 1: Design Tools**  Students will understand the importance of planning before implementing a project. Students will also know when to select a suitable design tool and justify their choice.  **R050: Topic Area 2: Human Computer Interface (HCI) in everyday life**  Students will know the purpose, importance and use of Human Computer Interfaces in application areas. Students will take into account the hardware and software considerations as well as methods of interactions  **R050: Topic Area 3: Data and testing**  Students will learn to recognise what is data and its importance. They will justify suitable data types for various contexts as well as importance of validation and verification of using data. Students will need to implement testing methods and understand the importance of data entry methods to reduce human error.  **R050: Topic Area 4: Cyber Security & Legislation**  In this part of the unit, students will identify the latest computer threats that are used in cyber attacks and know the prevention strategies to protect computers. Students will discuss and research into the impact  **R050: Topics Area 5: Digital Communications**  Students will know the purpose of each digital communication and the advantages and disadvantages of each digital communication.  They will also need to know the characteristics of the software used to  create digital communications and the device used, and know the characteristics of each type of distribution channel outlining their pros and cons.  Finally, students will know the characteristics of each connectivity method with their advantages and disadvantages of each connectivity method  **R050: Topics Area 6: Internet of Everything**  In the last part of this unit students will learn the four pillars of the Internet of Everything and understand the interaction between them. They will know about digital interactivity and how devices can be tailored to meet the needs of end users. | * Create mind maps, wireframes, storyboards, visualisations and flowcharts for various contexts * Creating an original document using relevant * Design tools either using software or by sketches * Know the importance of HCI applied to each application area * Advantages and disadvantages of the use of an HCI for each application area * Know the different display types and sizes that an * HCI can be used on The impact of display and resources on the HCI * Advantages and disadvantages of hardware considerations for using an HC * Assess the suitability and justify the use of data types applied to a given context * Practice validation methods using spreadsheets and websites * Know the purpose of each data collection method * Advantages and disadvantages of the data collection methods * Assess the suitability and justify the use of the data collection methods applied to a given context * Advantages and disadvantages of testing * Discuss and research on how each type of social engineering can be used to gather data and information • How to mitigate against the threats * Assess computer crimes and how it breaks certain legislations * Assess the suitability and justify the use of a digital communication applied to a given context * Select and assess software to meet user requirements * Select and assess the suitability of digital device(s) applied to a given context * Select and assess, and justify, the suitability of distribution channel(s) applied to a given context * Select and assess the suitability of connectivity method(s) applied to a given context * Select and assess the suitability of the digital communication, distribution channel and connectivity linked to specific audience demographic * Assess the suitability of the use of the IoE for each application area | * Mind Map * Visualisation * Flowchart * Wireframe * Storyboard * Human Computer Interface * Hardware * Software * Memory * Processing Power * Operating System * Tunnel Timeline * Storage Device * Alphanumeric * Boolean * Currency * Decimal * Integer * Real * Data type, Format, Input mask, Length check * Lookup * Presence and Range check * Double entry * Primary Hard Drive * Network Drive * Portable external Hard Drive Disc (HDD),Solid-State Drive (SSD),Network-attached storage (NAS) device, USB Flash Drives, Wireless Drives * Black, White, Grey Hat Testing * Computer Misuse Act * Copyright, Designs and Patents Act * Data Protection Act * Freedom of Information Act * Health & Safety at Work Act * Adware, Botnet, Ransomware, Spyware, Trojan Horse, Virus, Worm * Encryption, Firewalls * Baiting, Phishing, Pretexting, Quid Pro Quo, Scareware, Shoulder Surfing * Audio * Collaboration tools * Leaflet * Infographics * Presentations * Reports * Social Media * Voice over Internet Protocol (VoIP) * Desktop Publishing (DTP) * Standard office applications * Smartphone * Smart TV * PC/Laptop * Tablet * Smartboard * Cloud, Email * Messaging * Mobile Apps * Multimedia * VoIP, 4G / 5G * Bluetooth | High quality Homework set on Google Classrooms  Teach-ICT.com  Hodder Education – Revision Book Cambridge Nationals in IT | Milestone Assessments within Units of work  Formal End of unit assessments | [Teach-ICT.com](https://teach-ict.com/2016/GCSE_Computing/OCR_J277/OCR_J277_home.html)  Hodder Education – Revision Book Cambridge Nationals in IT | The National Science Museum (free events)  <https://www.sciencemuseum.org.uk/>  The Royal Institute of Science (free events)  <https://www.rigb.org/families/family-fun-days>  **National Museum of Computing, Bletchley Park (Near Milton Keynes)**  <http://www.tnmoc.org/>    Centre for Computing History, Cambridge  <http://www.computinghistory.org.uk/> |