GES AS Computer Science Half Termly 2 January – March 2020

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| TOPIC: Theory Processor Fundamentals |

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| Theme: Functional\_characteristics\_of\_a\_processor | Level: Year 12 |
| Objectives: *To understand the Structure\_and\_role\_of\_the\_Processor* | |

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| Focussing Questions | Key Words | |
| **Theory: Theory Fundamentals**   1. Describe how analogue data is stored on a digital system.    1. How can images be stored on a digital system?    2. How are Video data stored on a digital system?    3. How can Sound be captured and stored on a digital system? 2. The use of Compression of Data.    1. What is Data Compression?    2. Why is Data compression needed in file transfers?    3. What are the 2 different methods of data compression?   Theory: Processor Fundamentals:  Describe basic Von Neumann architecture, identifying the need for and the uses of special registers in the functioning of a processor.   1. What is the process of fetching instructions from memory 2. Why does the CPU need special registers? 3. How does the Processor Reset Function work.   **Practical – Procedures and Functions**   1. Void Function and Return Value Function    1. What is the difference between a Void Vunction and a Value Return Function.    2. Explain Decomposition and how Step-Wise Structures can be implemented in programming?    3. Describe Structured English as an Algorithm 2. Algorithm design and problem-solving    1. How can different algorithms be used to design a solution.    2. What are Structure charts and how is it used in programming? 3. Programming tasks.    1. Working through the 2020 Pre=Release tasks.   **Repl.it – An one Line programming Console will be used with Chromebooks** | Sampling  Lossy  Lossless  Compression  Run Length Encoding  JPEG  MPEG  MP3  MP4  Archive  PDF  Von Neumann Architecture,  Variables, Registers, Interrupts, Sequence Control Register  Procedures, Functions, Void Functions, Value Returning Function, Modularity, Structured Charts, Algorithms  Files, Append, Write, Read | Explaining words  ...so...  ..because...  Therefore...  As a result...  This means that...  Therefore...  This caused...  ...Due to the fact...  ...caused…  However |

**Text Book: Departmental textbooks and Worksheets.**