GES IGCSE Computer Science Term 1 (Sept-Oct, 2019-20)

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| TOPIC: Data Representation |

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| Theme: Understand that computers use binary to represent data (numbers, text, sound, graphics) and program instructions. | Level: Year 10 |
| Objectives: To investigate the different types of Analogue data and how it can be represented in a Binary System.  To use basic programming constructs to create simple programs. | |

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| Focussing Questions | Key Words | |
| **Theory**   1. The need for different Data Type.    1. Why do we need different datatypes?    2. How are different data types represented in a Computer? 2. The use of different numbering systems    1. Describe the use of Binary Numbering System    2. Convert Denary to Binary 3. The use of Hexadecimal Numbering system.    1. Why does programmers prefer the use of Hexadecimal numbering?    2. Show the different uses of Hexadecimal in modern computing. 4. How is data stored on a computer?    1. How is Text represented on a Computer    2. How is Video represented on a Computer    3. How is Audio captured and represented on a Computer.    4. How are Images represented on a Computer?   **Practical**   1. Algorithmic programming?    1. Why are Algorithms an important tool in programming?    2. What are the different Algorithmic approaches to solving problems?    3. Explain the use of Flowcharts in problem solving?    4. Explain the use of Pseudocode in problem solving?    5. How can Trace tables be used to detect and correct logical errors? 2. Programming Concepts    1. What are the basic programming constructs used in programming?    2. How can Sequencing be used in creating a program? | Character  Bit  Byte  Binary  Denary  Hexadecimal  High/Low  ASCII  Binary  Hexadecimal  Denary  Sampling  Bit  Byte  Resolution  Bitrate  Sequencing  Selection  Iteration  Trace table  Dry run  Variables  Initialisation  Construct | 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**