Throughout the training year you are required to take personal responsibility for renewing and updating your subject knowledge, identifying areas for development, setting personal targets and addressing any areas of weakness. This process commences now, before the course starts, and will continue throughout.

RAG Rate your confidence in each area with a grade. **RED (High) Green (Low)** Highlight the statements which you believe require development

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| **Teachers should understand : Computer Science Theory** | Pre-Interview | Pre- programme | Assessment Point 1 | Assessment Point 2 | Assessment Point 3 | Assessment Point 4 |
| **System Architecture, Memory & Storage** |  |  |  |  |  |  |
| The purpose of the CPU |  |  |  |  |  |  |
| Von Neumann architecture: MAR (Memory Address Register); MDR (Memory Data Register); Program Counter; Accumulator |  |  |  |  |  |  |
| Common CPU components and their function: |  |  |  |  |  |  |
| The difference between RAM and ROM |  |  |  |  |  |  |
| The need for secondary storage |  |  |  |  |  |  |
| Suitable storage devices and storage media for a given application |  |  |  |  |  |  |
| **Wired & Wireless Networks, Topologies, protocols and layers, System Security** |  |  |  |  |  |  |
| Types of networks (LAN, WAN) |  |  |  |  |  |  |
| The hardware needed to connect stand-alone computers into a Local Area Network |  |  |  |  |  |  |
| The internet as a worldwide collection of computer networks: |  |  |  |  |  |  |
| Different physical and logical network topologies  Wifi: frequency and channels encryption |  |  |  |  |  |  |
| The uses of IP addressing, MAC addressing and protocols |  |  |  |  |  |  |
| Forms of attack and threats posed to networks |  |  |  |  |  |  |
| Identifying and preventing vulnerabilities: |  |  |  |  |  |  |
| **System Software; Ethical, legal, cultural and environmental concerns** |  |  |  |  |  |  |
| The purpose and functionality of system software |  |  |  |  |  |  |
| Operating systems and utility software |  |  |  |  |  |  |
| How key stakeholders are affected by technologies |  |  |  |  |  |  |
| Ethical, legal, cultural and environmental implications of computer science |  |  |  |  |  |  |
| Legislation relevant to Computer Science |  |  |  |  |  |  |

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| **Teachers should understand : Computer Science Algorithms & Programming** | Pre-Interview | Pre- programme | Assessment Point 1 | Assessment Point 2 | Assessment Point 3 | Assessment Point 4 |
| **Algorithms & computational thinking** |  |  |  |  |  |  |
| The concepts of abstraction, decomposition and algorithmic thinking |  |  |  |  |  |  |
| Standard search and sort algorithms |  |  |  |  |  |  |
| How to produce and interpret algorithms |  |  |  |  |  |  |
| **Programming Techniques & Computational Logic** |  |  |  |  |  |  |
| The use of variables, constants, operators, inputs, outputs and assignments |  |  |  |  |  |  |
| The use of the three basic programming constructs used to control the flow of a program: sequence; selection; iteration (count and condition controlled loops) |  |  |  |  |  |  |
| Defensive design considerations, maintainability, and testing |  |  |  |  |  |  |
| Why data is represented in computer systems in binary form |  |  |  |  |  |  |
| The characteristics of basic logic diagrams and truth tables |  |  |  |  |  |  |
| **Data Representation** |  |  |  |  |  |  |
| Units of storage (including bit, nibble, byte, kilobyte etc) |  |  |  |  |  |  |
| Number conversion (Binary, Decimal & Hexadecimal) |  |  |  |  |  |  |
| How characters, images and sound are represented in binary |  |  |  |  |  |  |
| Lossy and Lossless compression and their purpose |  |  |  |  |  |  |