Northolt High School
**Scheme of Learning**

Computer Science

| Year group: 12 | Term: Summer 1 | Unit duration: 6 weeks | Number of lessons: 3 | Unit title: **Data Representation – encoding/compression** |
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| **Assessment outcome:** To how data is represented, what is encoding and why compression is needed? | **Fertile question?** Is coding and encoding the same thing? |
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| **Key skills/concepts/knowledge that students should cover** | **Start RAG** | **End RAG** | **Literacy. Key vocabulary/subject terminology that students should cover** |
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| What is data representation? What is decoding and encoding? What is compression?<br>Internal and external data representation. Key theory and knowledge of types of data and how these are represented.<br>Binary digits, megabytes, gigabytes.<br>Lossy and lossless compression – JPEG, MPEG, PDF, MP3, WAV<br>Sequencing of codes, conversion of data from one type to another and understanding when and where this is appropriate | | | WAV<br>PDF<br>MPEG<br>Lossy<br>Lossless<br>Data<br>Bits<br>Bytes<br>Compression |
| **Stretch. Key skills/concepts/knowledge that students should cover**<br><br>To create/ convert lossy and lossless data to be used for a variety of media applications. | | | **Suggested materials teachers could/should use**<br><br>TeachICT, Isacc Computing, A Level Computing textbook<br>Computer Science PowerPoints/Worksheets<br><br>**Key home learning tasks students should complete**<br><br>Worksheets based on data representation, encoding, decoding and compression |