| **Computer Science** |
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We are asking all students to complete some Independent Preparatory Work over the summer, before they join Year 12 in September. You will need to bring this work to lessons as the content will be assessed through introductory assessments which will be completed within the few first weeks of the new term.

| **Tasks** |
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| **Binary number systems:**[**https://www.bbc.co.uk/bitesize/guides/zwk8tv4/revision/1**](https://www.bbc.co.uk/bitesize/guides/zwk8tv4/revision/1)**Create an account with Issac and work through these lessons:**[**https://isaaccomputerscience.org/topics/a\_level?examBoard=all&stage=all#ocr**](https://isaaccomputerscience.org/topics/a_level?examBoard=all&stage=all#ocr)**1.4.1** [**Data Types**](https://isaaccomputerscience.org/concepts/dsa_datastruct_definitions)* **(a)** [**Primitive data types**](https://isaaccomputerscience.org/concepts/prog_concepts_data_types)**, integer, real/floating point, character, string and Boolean**
* **(b) Represent** [**positive integers**](https://isaaccomputerscience.org/concepts/data_numbases_unsigned_integers) **in binary**
* **(c) Use of** [**sign and magnitude**](https://isaaccomputerscience.org/concepts/data_numbases_signed_integers#signmagnitude) **and** [**two's complement**](https://isaaccomputerscience.org/concepts/data_numbases_signed_integers#twoscomplement) **to represent negative numbers in binary**
* **(d)** [**Addition and subtraction**](https://isaaccomputerscience.org/concepts/data_numbases_signed_integers) **of binary integers**
* **(e) Represent positive integers in** [**hexadecimal**](https://isaaccomputerscience.org/concepts/data_numbases_intro_concepts#hex)
* **(f)** [**Convert positive integers**](https://isaaccomputerscience.org/concepts/data_numbases_conversions) **between binary, hexadecimal and denary**
* **(g) Representation and normalisation of** [**floating point numbers**](https://isaaccomputerscience.org/concepts/data_numbases_floating_point) **in binary**

**Do the Excel worksheet** |
| **Extra reading** |
| [Learn Python](https://www.learnpython.org/)[Python Tutorial](https://www.w3schools.com/python/default.asp)[Isaac Computer Science](https://isaaccomputerscience.org/) |