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| **Year 13 Term 3****A Level Computer Science** | In the field of Computing, our goal is to foster creativity and problem-solving skills in students, enhancing their comprehension and practical application of fundamental concepts in Computer Science and Information Technology (IT). Our aim is to empower students to critically analyse computational issues and devise innovative solutions through the process of designing, writing, developing, and assessing digital solutions |
| **Enquiry Questions: If you import code from many packages, What kind of strength would you have as a programmer? Skilful? Intuitive?** |
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| **Component 03: Computer Science Programming Project - Development**Students will have the opportunity to demonstrate their programming skills in creating their own programming project. Learners will be expected to analyse, design, develop, test, evaluate and document a program written in Python. The underlying approach to the project is to apply the principles of computational thinking to a practical coding problem. Learners are expected to apply appropriate principles from an agile development approach to the project development. |

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| **Knowledge**Students will know about… | **Application/Skills**Students will be able to… | **Vocabulary** | **Home Learning** | **Assessment** | **Extra Resources****Extended Reading** | **Cultural Capital** |
| * Students will be using the Iterative Development process and demonstrate their Python Programming skills in their project documentation.
* Student will need to recall their skills throughout the course and experience first hand in creating their own software.
* The documentation will need to evidence their testing during development.to show their understanding and skill of their programming code.
 | * Provide annotated evidence of each stage of the iterative development process justifying any decision made.
* Provide annotated evidence of prototype solutions justifying any decision made.
* Testing to inform development; Provide annotated evidence for testing at each stage justifying the reason for the test.
* Provide annotated evidence of any remedial actions taken justifying the decision made.
 | * Abstraction
* Decomposition
* Computational Thinking
* Success Criteria
* Flowcharts
* Pseudocode
* Algorithm
* Data Structure
* Sequence
* Selection
* Iteration
* Subroutine
* Libraries
* Packages
* Variables
* Data Types
* Testing
* Evaluation
* Input Validation
* Object Oriented Programming
* Prototyping
* Version Control
* Polymorphism
* Instantiation
* Inheritance

Class Diagram | Teach-ICT.comPG Online – ClearRevise A Level Computer ScienceIsaac Computer Science | Controlled AssessmentStudents are expected to complete this independently with guided learning. | [Teach-ICT.com](https://teach-ict.com/2016/GCSE_Computing/OCR_J277/OCR_J277_home.html)[Isaac Computer Science](https://isaaccomputerscience.org/topics/gcse?examBoard=all&stage=all#all)Seneca – [Computer Science](https://app.senecalearning.com/classroom/course/a1ce4570-6e27-11e8-af4b-35cf52f905c2/section/65ac2e24-3b57-4598-b4dc-01e04eddee1b/session)BBC BitesizeHodder Education – Revision Book A Level Computer SciencePG Online - AS and A Level Computer Science | The National Science Museum (free events)<https://www.sciencemuseum.org.uk/>The Royal Institute of Science (free events)<https://www.rigb.org/families/family-fun-days>**National Museum of Computing, Bletchley Park (Near Milton Keynes)** <http://www.tnmoc.org/> <https://www.bletchleypark.org.uk/><http://www.codesandciphers.org.uk/bletchleypark/>(virtual tour) Centre for Computing History, Cambridge<http://www.computinghistory.org.uk/> |