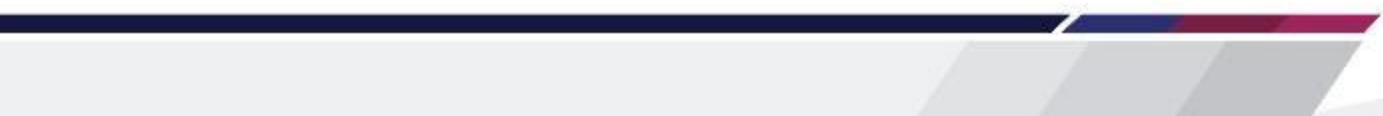




A Level Computer Science (H446)

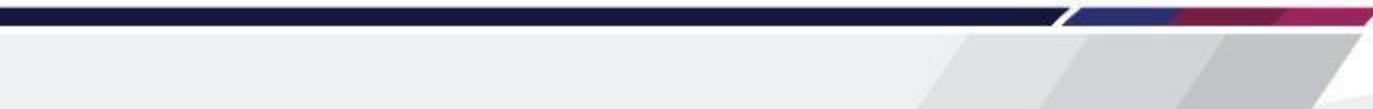
Computing Department



Staff



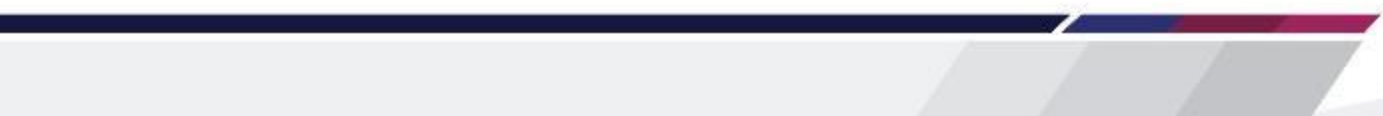
- ★ Mr Abedin – Head of Computing
- ★ Mr Hill
- ★ Miss Hart





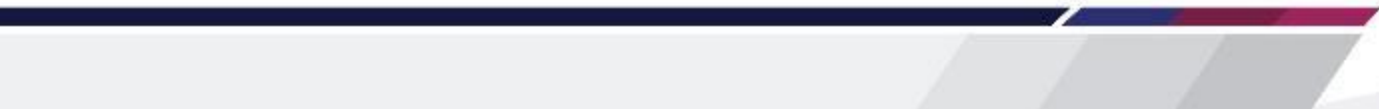
Why choose Computing?

- ✧ Computer Science is a practical subject where students can apply the academic principles learned in the classroom to real-world systems. It's an intensely creative subject that combines invention and excitement, and can look at the natural world through a digital prism.



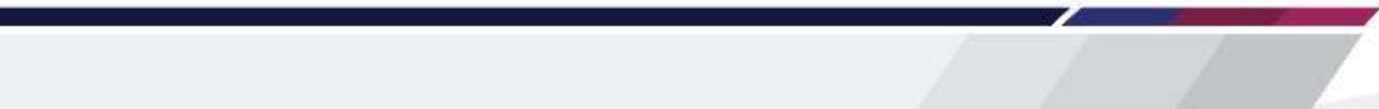


The aims of this qualification are to enable learners to develop:





An understanding and ability to apply the fundamental principles and concepts of computer science, including: abstraction, decomposition, logic, algorithms and data representation



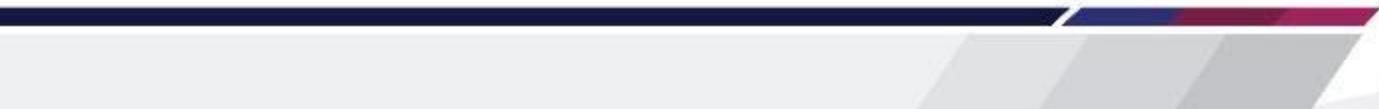


The capacity to think creatively,
innovatively, analytically, logically and
critically





The capacity to see relationships
between different aspects of computer
science





Mathematical skills.



Course Overview

- * The characteristics of contemporary processors, input, output and storage devices
- * Software and software development
- * Exchanging data
- * Data types, data structures and algorithms
- * Legal, moral, cultural and ethical issues
- * Elements of computational thinking
- * Problem solving and programming
- * Algorithms to solve problems and standard algorithms
- * *The learner will choose a computing problem to work through according to the guidance in the specification.*
- * Analysis of the problem
- * Design of the solution
- * Developing the

| Assessment Overview | |
|---|----------------------------|
| Computer systems (01) 140 marks 2 hours and 30 minutes written paper (no calculators allowed) | 40% of total A level |
| Algorithms and programming (02*) 140 marks 2 hours and 30 minutes written paper (no calculators allowed) | 40% of total A level |
| Programming project 03* – Repository or 04* – Postal or 80 – Carry forward (2018 onwards)* 70 marks Non-exam assessment | 20% of total A level |



Units of Study (Both Exam Papers)

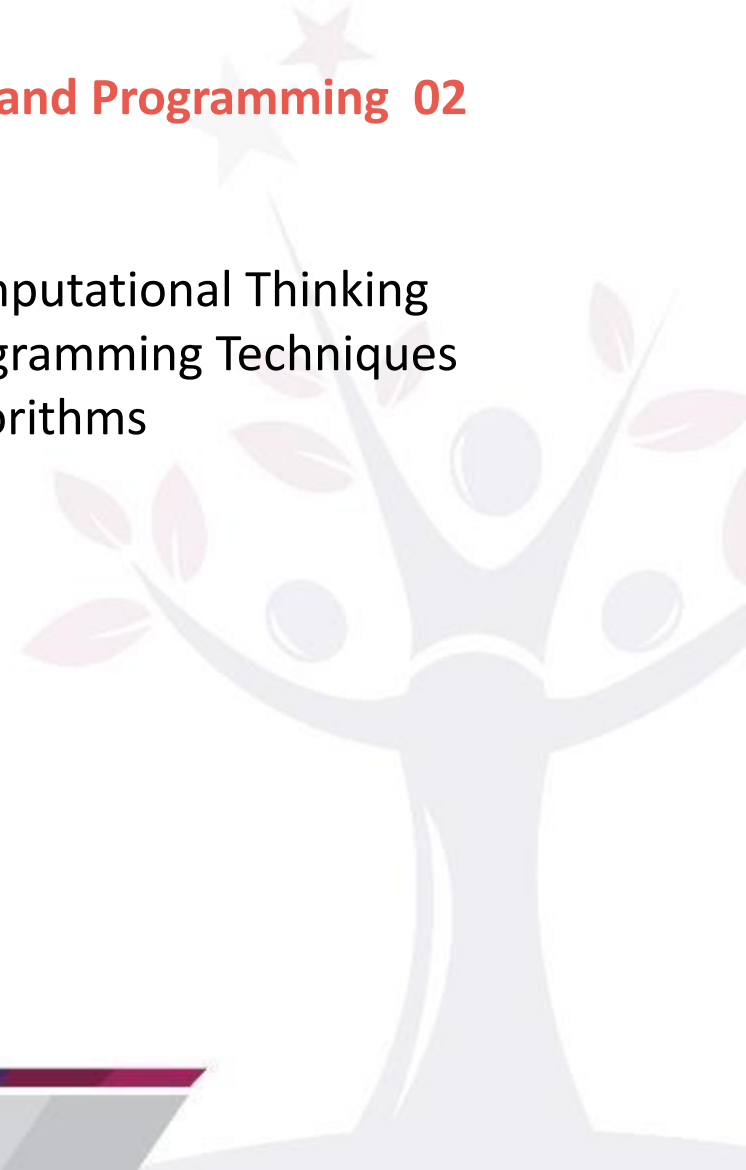


Computer Systems 01 40%

- Unit 1 Components of a computer and their uses
- Unit 2 Systems software and applications generation
- Unit 3 Software Development
- Unit 4 Exchanging Data
- Unit 5 Networks and Web Technologies
- Unit 6 Data Types
- Unit 7 Data Structures
- Unit 8 Boolean Algebra
- Unit 9 Legal, moral, ethical and cultural issues

Algorithms and Programming 02 40%

- Unit 10 Computational Thinking
- Unit 11 Programming Techniques
- Unit 12 Algorithms



NEA Project - Coursework (20%)



- Learners will be expected to analyse, design, develop, test, evaluate and document a program written in a suitable programming language. 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.



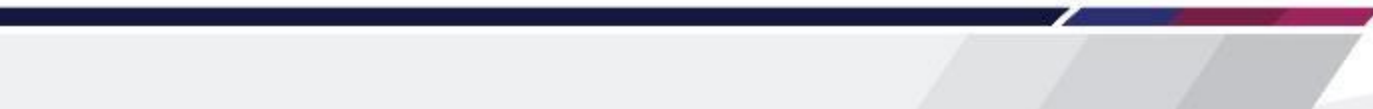
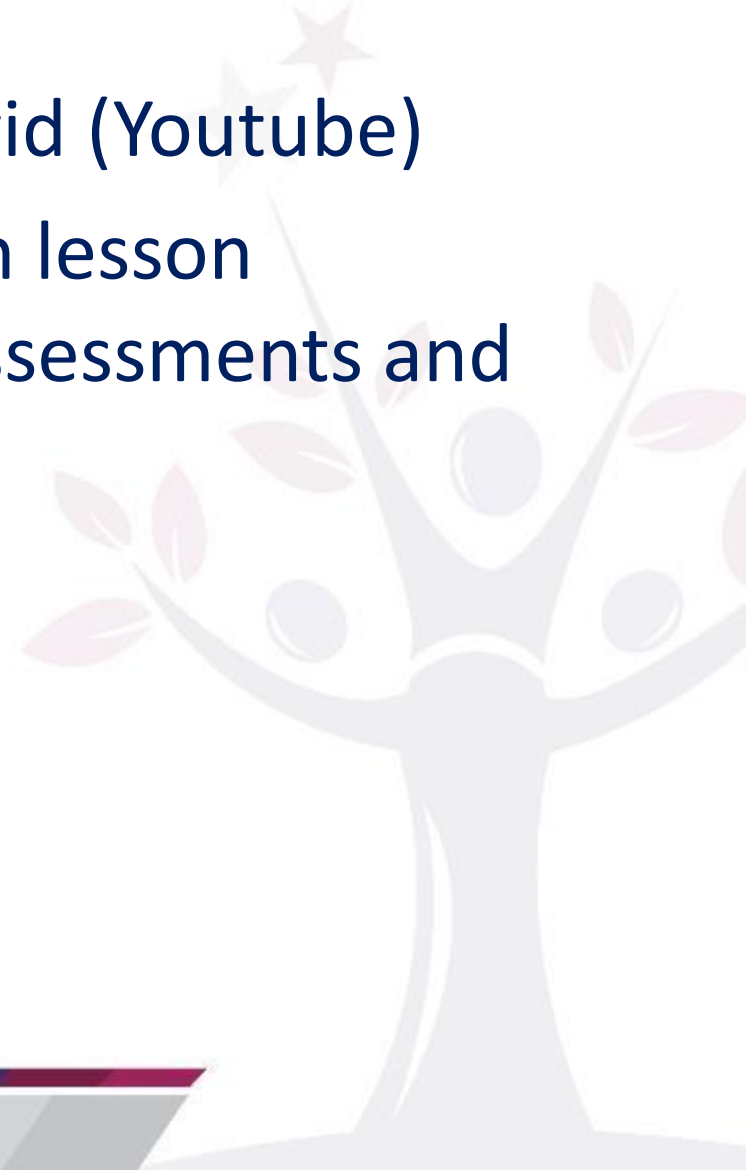
Entry Requirements

- ✦ It is a requirement that students choosing to do the A Level Computing course apply with a predicated grade of 7+ and subsequently achieve a **Grade 7** at GCSE Mathematics and GCSE Computer Science
- ✦ You **must** also have studied GCSE Computer Science (any exam board)
- ✦ Contact Tam Abedin if any concerns regarding this tam.abedin@astreastivo.org



Resources

- ★ Online videos: Craig and David (Youtube)
- ★ PG Online full resources with lesson powerpoints, worksheets, assessments and answer sheets
- ★ PG Online Student Textbook





For more information

✧ Please contact Tam Abedin (Head of Computing) for more information:

tam.abedin@astreastivo.org

