Tarporley Sixth Form College
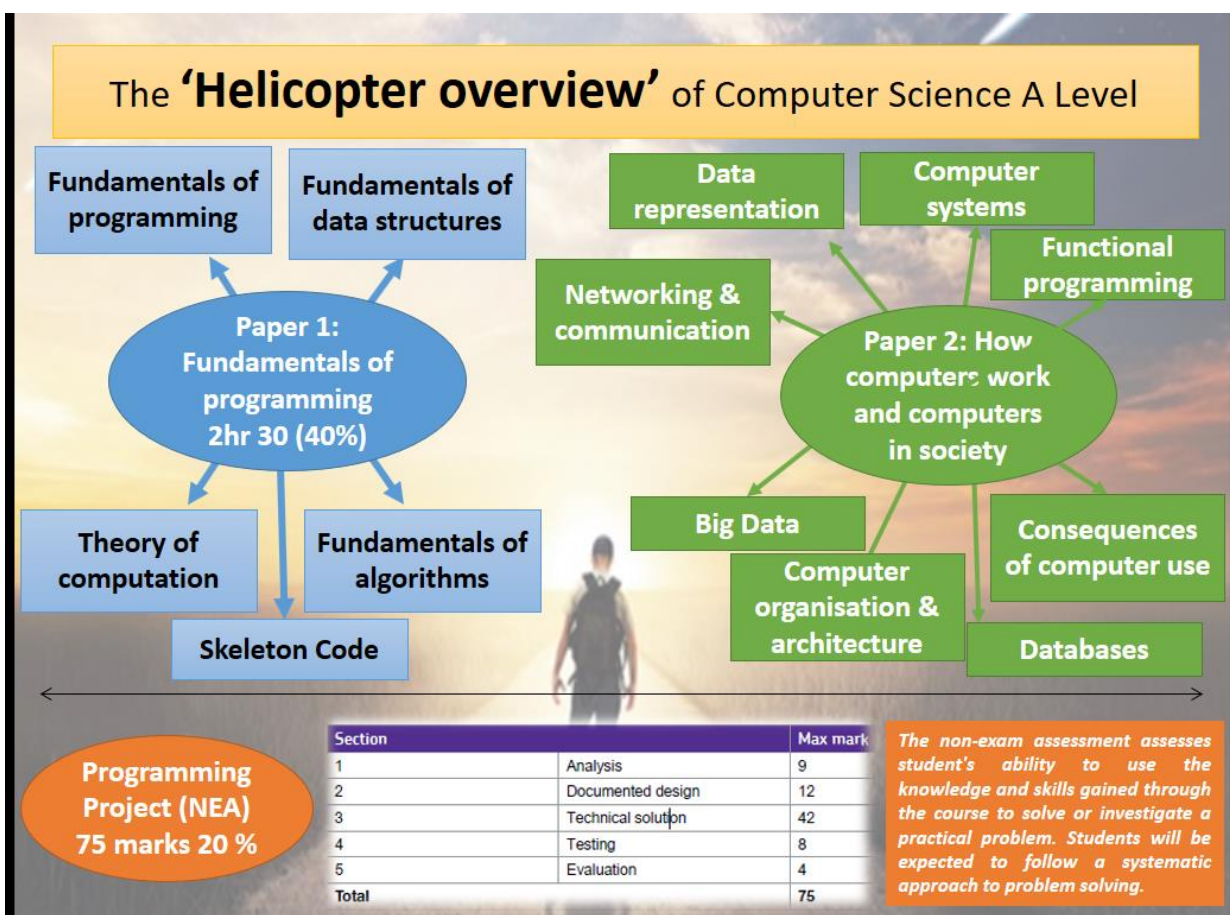# Computer Science A Level
Programme of Study

Exam Board: AQA

80% Examination

(40% per exam)

20% Project (NEA)

NAME:	
TARGET GRADE	
ASPIRATIONAL GRADE	

The 'Helicopter overview' of Computer Science A Level

Fundamentals of programming

Fundamentals of data structures

Data representation

Computer systems

Functional programming

Networking & communication

Paper 1: Fundamentals of programming 2hr 30 (40%)

Paper 2: How computers work and computers in society

Theory of computation

Fundamentals of algorithms

Skeleton Code

Big Data

Computer organisation & architecture

Consequences of computer use

Databases

Programming Project (NEA) 75 marks 20 %

Section		Max mark
1	Analysis	9
2	Documented design	12
3	Technical solution	42
4	Testing	8
5	Evaluation	4
Total		75

The non-exam assessment assesses student's ability to use the knowledge and skills gained through the course to solve or investigate a practical problem. Students will be expected to follow a systematic approach to problem solving.

Your Assessment Objectives:

AO1 Programming	Demonstrate knowledge and understanding of the principles and concepts of computer science, including abstraction, logic, algorithms and data representation.
AO2 Computer Systems	Apply knowledge and understanding of the principles and concepts of computer science, including to analyse problems in computational terms.
AO3 Programming Project (NEA)	Design, program and evaluate computer systems that solve problems, making reasoned judgements about these and presenting conclusions.

Your Key Topics over the Course:

Paper 1	Fundamentals of programming
Paper 1	Fundamentals of data structures
Paper 1	Fundamentals of algorithms
Paper 1	Theory of computation
Paper 2	Fundamentals of data representation
Paper 2	Fundamentals of computer systems
Paper 2	Computer organisation and architecture

Paper 2	Consequences of uses of computing
Paper 2	Fundamentals of communication and networking
Paper 2	Fundamentals of databases
Paper 2	Big Data
Paper 2	Fundamentals of functional programming
NEA	Systematic approach to problem solving

How your course is structured:

Year 12:
• Paper 1: Fundamentals of data structures • Paper 2: Fundamentals of data representation • Paper 1: Fundamentals of algorithms • Paper 1: Fundamentals of programming Assessment 1: Data Representation Assessment 2: Data Structures Assessment 3: Programming Operators and Variables and Data types
Christmas Holidays
• Paper 2: Fundamentals of computer systems • Paper 2: Fundamentals of computer organisation and architecture • Paper 1: Fundamentals of programming Assessment 1: Algorithms Assessment 2: Hardware and Software Assessment 3: Programming Sub Routines
Easter Holidays
• Paper 2: Fundamentals of computer organisation and architecture • Paper 1: Fundamentals of programming • NEA: Setting the project and Analysis Assessment 1: End of Year Exams Assessment 2: NEA Progress
Summer Holidays

Year 13:
• Paper 1: Theory of Computation • Paper 2: Fundamentals of Databases • Paper 2: Fundamentals of communication and networking • Paper 2: Big Data • NEA: Design, Implementation and Testing Assessment 1: Theory of Computation Assessment 2: Networking Assessment 3: NEA Progress
Christmas Holidays
• Paper 2: Consequences of uses of computing • Paper 2: Fundamentals of functional programming • NEA: Completion Assessment 1: Mock Exams Assessment 2: FINAL Coursework Grade
Easter Holidays
• Revision for Paper 1 and 2 • Timed exam practice • NEA submission 20% External exams

Key resources to learn:

Visual Studio Community.

The IDE (Interactive Development Environment) used for programming within lessons. It is highly recommended that you download and install a copy for use at home.

https://visualstudio.microsoft.com/downloads/

OneNote

All lesson resources and materials are published and distributed through a Microsoft OneNote Class Notebook. Student notes, tasks, resources are to be keep within this Notebook so it is fully accessible by yourself and the teacher. Always organise this with appropriate section names and well-structured pages with suitable page titles.

Consolidate learning by regularly reviewing, adding to and identifying areas of less understanding within your notebook. Revision starts form day 1. Topics build and inter-relate to each other – find the links.

Text Book
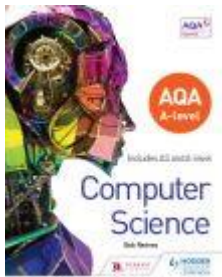
AQA A-level Computer Science

Author: Bob Reeves
Publisher: Hodder Education
ISBN-13: 978-1-4718-3951-1

Physics and Maths Tutor

https://www.physicsandmathstutor.com/computer-science-revision/a-level-aqa/

Access to high quality revision notes, videos and past paper questions and mark schemes separated to each topic

Wider Reading

Read around and be excited about your subject! Follow news channels and read articles to stay up to date on developments in technology and computer science and the impact this has on individuals and society.

Programming Skills

Independently develop your programming skills. Use a range of different online platforms, forums and resources to challenge yourself and practice.