



## Computer Science A Level

### Programme of Study

**Exam Board: AQA**

**80% Examination**

**(40% per exam)**

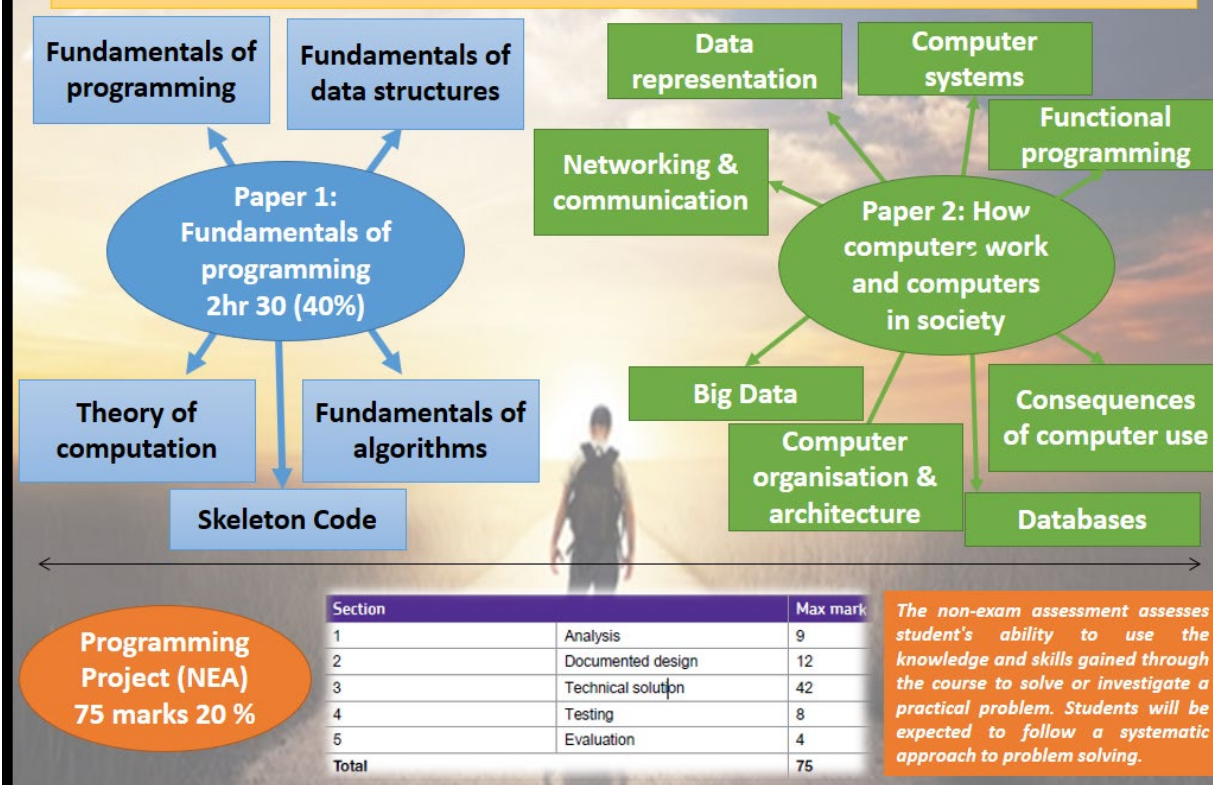
**20% Project (NEA)**

NAME:

**TARGET  
GRADE**

**ASPIRATIONAL  
GRADE**

#### The 'Helicopter overview' of Computer Science A Level



# Your Assessment Objectives:



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

## Your Key Topics over the Course:

|                |                                               |
|----------------|-----------------------------------------------|
| <b>Paper 1</b> | <b>Fundamentals of programming</b>            |
| <b>Paper 1</b> | <b>Fundamentals of data structures</b>        |
| <b>Paper 1</b> | <b>Fundamentals of algorithms</b>             |
| <b>Paper 1</b> | <b>Theory of computation</b>                  |
| <b>Paper 2</b> | <b>Fundamentals of data representation</b>    |
| <b>Paper 2</b> | <b>Fundamentals of computer systems</b>       |
| <b>Paper 2</b> | <b>Computer organisation and architecture</b> |

|                |                                                     |
|----------------|-----------------------------------------------------|
| <b>Paper 2</b> | <b>Consequences of uses of computing</b>            |
| <b>Paper 2</b> | <b>Fundamentals of communication and networking</b> |
| <b>Paper 2</b> | <b>Fundamentals of databases</b>                    |
| <b>Paper 2</b> | <b>Big Data</b>                                     |
| <b>Paper 2</b> | <b>Fundamentals of functional programming</b>       |
| <b>NEA</b>     | <b>Systematic approach to problem solving</b>       |

# How your course is structured:



| Year 12:                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Paper 1: Fundamentals of data structures</li> <li>Paper 2: Fundamentals of data representation</li> <li>Paper 1: Fundamentals of algorithms</li> <li>Paper 1: Fundamentals of programming</li> </ul> <p>Assessment 1: Data Representation<br/>Assessment 2: Data Structures<br/>Assessment 3: Programming Operators and Variables and Data types</p> |
| Christmas Holidays                                                                                                                                                                                                                                                                                                                                                                          |
| <ul style="list-style-type: none"> <li>Paper 2: Fundamentals of computer systems</li> <li>Paper 2: Fundamentals of computer organisation and architecture</li> <li>Paper 1: Fundamentals of programming</li> </ul> <p>Assessment 1: Algorithms<br/>Assessment 2: Hardware and Software<br/>Assessment 3: Programming Sub Routines</p>                                                       |
| Easter Holidays                                                                                                                                                                                                                                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>Paper 2: Fundamentals of computer organisation and architecture</li> <li>Paper 1: Fundamentals of programming</li> <li>NEA: Setting the project and Analysis</li> </ul> <p>Assessment 1: End of Year Exams<br/>Assessment 2: NEA Progress</p>                                                                                                        |
| Summer Holidays                                                                                                                                                                                                                                                                                                                                                                             |

| Year 13:                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Paper 1: Theory of Computation</li> <li>Paper 2: Fundamentals of Databases</li> <li>Paper 2: Fundamentals of communication and networking</li> <li>Paper 2: Big Data</li> <li>NEA: Design, Implementation and Testing</li> </ul> <p>Assessment 1: Theory of Computation<br/>Assessment 2: Networking<br/>Assessment 3: NEA Progress</p> |
| Christmas Holidays                                                                                                                                                                                                                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>Paper 2: Consequences of uses of computing</li> <li>Paper 2: Fundamentals of functional programming</li> <li>NEA: Completion</li> </ul> <p>Assessment 1: Mock Exams<br/>Assessment 2: FINAL Coursework Grade</p>                                                                                                                        |
| Easter Holidays                                                                                                                                                                                                                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>Revision for Paper 1 and 2</li> <li>Timed exam practice</li> <li>NEA submission 20%</li> </ul> <p>External exams</p>                                                                                                                                                                                                                    |

# 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.

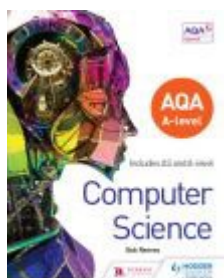
<https://visualstudio.microsoft.com/downloads/>

## OneNote

All lesson resources and materials are published and distributed through a Microsoft OneNote Class Notebook. Student notes, tasks, resources are to be kept 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 from 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.