SIXTH FORM CURRICULUM GUIDE

COMPUTER SCIENCE

AQA

ENTRY REQUIREMENTS

At least grade 7 in GCSE Mathematics or at least grade 7 in GCSE Computer Science.

INTRODUCTION

The next twenty years will be exciting times for Computer Science as it develops at an amazing rate. It is hard to believe that our tablet has more processing power than the flight computer on the space shuttle. The challenge is to respond to this ever-changing world and develop the knowledge and skills that will help us understand technology that hasn't yet been invented. Computer Science is about gaining the essential thinking skills needed to succeed in our digital, connected society.

We will teach you to think computationally about problems and issues and give opportunities to apply this thinking to wider problems in broader contexts. Computer Science is a creative and practical subject where you can apply the academic principles learned in the classroom to understanding and developing real-world systems. Computer Science helps you to develop the skills to solve problems, design systems and understand the power and limits of human and machine intelligence.

Ideal for students who want to go on to study Computer Science at a higher level this course provides a good grounding for subject areas that require computational thinking and analytical skills. You will gain valuable employability skills as the number of people working as technical specialists is forecast to increase and there are now very few jobs that do not involve the use of computers.

WHAT YOU WILL STUDY

Year 12

- Programming skills using Python, Pygame and HTML/CSS.
- Number systems (binary and Hexadecimal) and representation of sound and images using photography and MIDI.
- The exciting world of encryption, ciphers and Turing machines.
- Hardware and the internal workings of the technology we use every day.
- You will gain problem solving experience and undertake a small scale project.
- You will be guided through the process of choosing a practical project for your non-exam assessment and begin the analysis of the application that you want to create and learn the mechanisms necessary to capture the requirements of real users..

Year 13

- Programming skills using SQL
- How big data is analysed to answer the topical questions of the day.
- Networks and security
- Protocols and how data travels around the world.

You will complete the practical project that will form your non-exam assessment. You will produce a formal design, and the majority of your marks will be awarded for the skill shown during the coding of your technical solution which you will thoroughly test and evaluate.

PAPER 1

Assessment
On-screen exam: 2 hours 30 minutes
40% of A-level

Question
Students answer a series of short questions and write/adapt/extend programs in an electronic answer document provided by us.

We will issue preliminary material, a skeleton program (available in each of the programming languages) and, where appropriate, test data, for use in the exam.

PAPER 2

Assessment
Written exam: 2 hours 30 minutes
40% of A-level

Questions
Compulsory short-answer and extended-answer questions.

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

Assessed
75 Marks
20% of A-level

*Click here to watch the course introductory video
from Head of Computer Science, Mrs Frances Sparrow.*

In order to join us in the Sixth Form, we require an average of grade 6 across eight GCSE subjects,
including English and Mathematics. See individual subjects for any specific requirements for study at A Level.

For detailed course information on all of the A Level subjects please visit the AQA, Edexcel or OCR websites.

If you have any questions about any aspect of the admissions process, please call 0115 935 4444 or email admissions@not.gdst.net