Broadening Horizons

We aim to broaden horizons by introducing software tools that can be used for a wide range of purposes. Many of the tools introduced are free and available for students to use at home. We ensure that students understand how software can be used in the real world, e.g. to plan an event or manage finances. We also introduce students to hardware and software that many students may not have access to outside of school, including Micro:bits, the Adobe suite, Microsoft Office, Chromebooks and PCs.

Careers

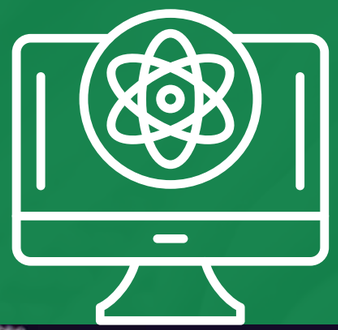
We run a series of ‘Careers in the Curriculum’ weeks in our school. For ICT, this week takes place in December. Students take part in a number of activities to encourage them to think about how what they learn in the classroom can be applied in a number of future careers including: IT Manager, Software Developer, Data Scientist, Web Developer and Information Security Analyst.

Immerse Yourself

Craig n Dave Videos

Students have access to a revision website called “Smart Revise” by Craig n Dave. This contains a range of multiple choice questions, exam style questions and flashcards.

The set of videos - which can be accessed via the QR code above covers the Computer Science course in more detail.



Praise and Reward

Our rewards system can be broadly split into four categories: classroom level, subject level, school level and privilege rewards. We’ll focus on classroom and subject rewards here - for more information about our rewards schemes, please see our website.

CLASSROOM LEVEL REWARDS

Awarded for: working hard, taking risks and rising to a challenge, making mistakes and learning from them, helping others, and taking pride in the school community.

Rewarded by: praise postcards, positive phone calls to parents/ carers, positive text messages home, and lesson based prizes.

SUBJECT LEVEL REWARDS

Reward scheme: star of the week, curriculum awards (Subject/ School Way, participation, working with pride, embracing the whole curriculum), high flyer, extra mile, most improved.

Rewarded by: names displayed on reward boards, certificates, social media posts.

Contact

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Isaac Computer Science

This is an overview of the OCR A Level Computer Science specification.

Scan the QR code to check it out!

WICKERSLEY PARTNERSHIP TRUST.

Edition 3
December
2022

COMPUTER SCIENCE

Curriculum Newsletter

YEAR 13

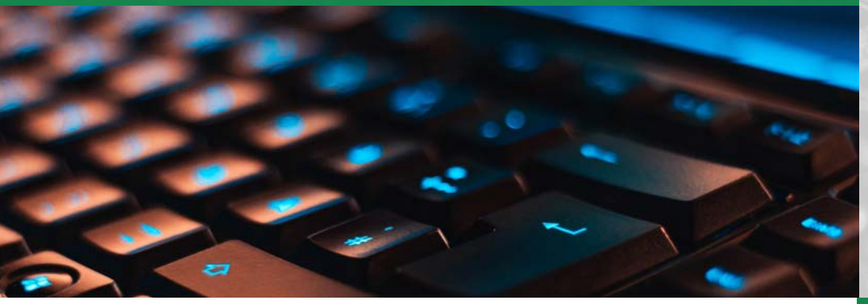
Curriculum Intent

In Computing we aim to provide an engaging, challenging, well sequenced curriculum which is broad and balanced, covering a range of computing and ICT topics. We aim to develop our students into 21st Century Digital Citizens who are able to use digital technology safely and responsibly, and to teach students both how to use technology effectively, with an understanding of how it works.

We aim to engender a love of learning, self-belief and aspiration through 4 key intentions:

- The Removal of Barriers to Learning
- Developing Skills for Learning
- Developing Personal Attributes
- Enriching Student Experiences and Broadening their Horizons

The Computing and IT Department's core purpose is to deliver an engaging and challenging curriculum through outstanding teaching and learning. Our aim is for students to develop skills and knowledge to prepare them for a future in a world where the use of technology is fully embodied.



Year 13 Curriculum

In Year 13 the following topics are covered:

Exchanging Data

Building on the content covered in Year 12, we explore networks, the internet structure including TCP/IP stack, DNS and protocols.

Data Types, Data Structures and Algorithms

In this topic we look at primitive data types, integer, real/floating point, character, string and Boolean. Students will learn how to represent positive integers in binary, use of sign and magnitude and two's complement to represent negative numbers in binary, representation and normalisation of floating point numbers in binary, floating point arithmetic and bitwise manipulation.

Legal, Moral, Cultural and Ethical Issues

Here we focus on the individual moral, social, ethical and cultural opportunities and risks of digital technology along with legislation surrounding the use of computers and ethical issues that can or may in the future arise from the use of computers.

Algorithms

In this topic we develop the skills required for the analysis and design of algorithms for a given situation. We look at the suitability of different algorithms for a given task and data set, in terms of execution time and space and methods to determine the efficiency of different algorithms. We also explore algorithms for key data structures, along with a range of searching, sorting and shortest path algorithms.

Programming Project

Students will continue to work on their programming project which makes up 20% of their final grade. Students 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. Students are expected to apply appropriate principles from an agile development and project development.

Have your say!

At WPT we're always looking for feedback. If you have any thoughts/opinions on this Curriculum Newsletter, its content or the curriculum in general, please scan the QR code to fill out a short feedback form.

Assessment Points

A Level Computer Science - H446 - OCR

Formal assessment for this course comes at the end of Year 13, where students will sit 2 exams (worth 40% each) and submit a piece of coursework (worth 20%). In Year 12, students are assessed at the end of each topic, roughly once per half term. Assessments are in a variety of formats including short and long answer written questions, multiple choice questions and practical tasks. In addition to end of topic assessments, students sit a mini mock in October, followed by a full mock in March where students will sit papers that mirror the structure and content that will be assessed in their final exams in the summer.

The Computing Way

The Computing Way is designed to help students become young subject specialists and has a key focus on the vital skills needed to achieve their full potential in this subject area.