

## 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.

Students have been loaned a school copy of a revision guide. Students are expected to return this revision guide at the end of the year in good condition.

## 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



Nick Lilleker  
WPT ICT  
Subject Director  
nllilleker@wickersley.net

## BBC Bitesize Computer Science

BBC Bitesize's Computer Science GCSE OCR page is a fantastic learning tool for Y11 Computer Science students.

Scan the QR code to check it out!



Edition 3  
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**COMPUTER SCIENCE**  
Curriculum Newsletter  
**YEAR 11**



# 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.



## 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.



# Year 11 Curriculum

In Year 11, the focus is on algorithms and programming where the following topics are covered:

## Algorithms

Key principles of computational thinking and problem solving, including abstraction, decomposition and algorithmic thinking.

We then focus on designing, creating and refining algorithms, representing these using flowcharts, pseudocode and the python programming language. We cover a range of standard searching and sorting algorithms, including binary search and insertion sort, students will develop an understanding of the main steps of the algorithms and how to apply the algorithm to a data set.

## Programming Fundamentals

Building on the python programming skills from year 10, we cover programming fundamentals in further depth, developing a deeper understanding of variables, constants, operators, inputs, outputs, assignments, data types, programming constructs, arithmetic operators, Boolean operators and file handling. We also develop a basic understanding of databases, exploring the storing of data in tables and the use of SQL to search for data.

## Producing Robust Programs

In this topic, we build and understanding of the issues a programmer should consider to ensure that a program caters for all likely input values. We cover some of the key principles of defensive design and good practice around creating maintainable programs.

## Boolean Logic

Here we cover logic diagrams using the operators AND, OR and NOT. We learn how to create, complete or edit logic diagrams and truth tables for given scenarios.

## Programming Languages and Integrated Development Environments

Here we explore the differences between high- and low-level programming languages, the need for translators and the differences, benefits and drawbacks of using a compiler or an interpreter. We also look at the common tools and facilities available in an Integrated Development Environment (IDE) and how each of the tools and facilities can be used to help a programmer develop a program.

# Assessment Points

GCSE Computer Science (9-1) - J277 - OCR

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. Year 11 Mock Exams take place in December and March, 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.

## THE COMPUTING WAY



We respect and look after computer equipment

We use **problem decomposition** to **break problems down into achievable goals**

We are not afraid to experiment, using **trial / error / undo**

We use the internet to support our learning

We organise our work with suitable filenames & folders

We use **formatting skills** to make our work presentable

We recognise that computing & IT is vital to careers now & in the future

We listen carefully & make notes during **demonstrations**

We use technology responsibly & lawfully

We use technology to solve problems



SUBJECT WAY