



COMPUTING AND ICT

It is the aim of the Computing Department at Newent Community School and Sixth Form Centre to ensure that all students leave our school equipped with the life-long learning skills and qualifications necessary to live, thrive and compete in this technological age. Computational thinking and programming skills lie at the heart of our approach at all key stages.

Computing concepts are first introduced at Key Stage 3. At Key Stage 4, students can opt for either an ICT related qualification, or Computer Science GCSE. At Key Stage 5, students can complete an A-Level in Computer Science, or apply and develop their ICT skills through a technical qualification at Level 3. Throughout their time at Newent Community School, your child can also participate in extra-curricular clubs that are run by the Computing Department. These include the Cyber Squad and Code Club.

As a CyberFirst Gold award school, we offer a wide range of activities through our links with the National Cyber Security Centre and GCHQ. There are three full-time members of staff in the Department, with vast experience and knowledge in ICT and Computer Science.

Key Stage 3:

- Computing is a core subject at Key Stage 3, and students follow different topics based on fun, real-life scenarios that develop a wide range of Computing and ICT skills and capability, and which encourage students to become enthused and excited with the subject. These include programming, networks, fashion technology, web design and core ICT skills.
- Students also learn about staying safe online, plus responsible technology use and practice.
- Our KS3 pupils have three discrete Computing lessons over two weeks, with schemes of learning following the National Curriculum Computing objectives.
- Student work is evidenced using OneNote, with students creating their individual portfolios over the course of each year.
- Detailed teacher feedback is given each term, highlighting a student's current skills and capabilities and clearly showing the next steps needed to improve and develop.
- We challenge our students so that they achieve to the very best of their ability – giving both short and long term highly aspirational targets.

Key Stage 4:

At Key Stage 4 we offer two rigorous and relevant options – OCR GCSE Computer Science, and OCR Creative iMedia (An ICT vocational qualification).

GCSE Computer Science will appeal to those students who are interested in the more 'technical' side of computers and ICT. So, if your child enjoys any of the following, then GCSE Computer Science would be the ideal subject for them:

- Learning about all types of electronic equipment and control programs (including mobile phones, laptops, home automation and industrial systems, etc.)
- Problem solving, analysis and critical thinking



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- Investigating current trends in computing
 - Mathematics or Science
 - Coding solutions

This is a very exciting course suitable for those students who want to learn more about what goes on inside a computer, how the Internet works, Artificial Intelligence, and how computers are used to solve some of mankind's biggest problems. There are 2 units to cover over the three year course:

Component 1: Computer systems

- Systems architecture
- Memory and storage
- Computer networks, connections and protocols
- Network security
- Systems software
- Ethical, legal, cultural and environmental impacts of digital technology

Component 2: Computer systems

- 2.1 Algorithms
- 2.2 Programming fundamentals
- 2.3 Producing robust programs
- 2.4 Boolean logic
- 2.5 Programming languages and Integrated Development Environments

So, if your child is considering a future career in Computing or Engineering fields, including Games Programmers, Hardware Engineers, Aerospace Engineers or Cyber Security, then this course for them.

Level 1/2 Creative iMedia (ICT) should appeal to those students who are interested in using computers and application software to acquire and apply high level creative and technical skills, knowledge and understanding of ICT. It allows students to:

- develop visual identities for clients
- plan and create original digital graphics
- plan, create and review original digital media products

This will help them to develop independence and confidence in using skills that would be relevant to the media industry. The qualification will also help them to develop learning and skills that can be used in other life and work situations, such as:

- thinking about situations and deciding what is required to be successful
- exploring different options and choosing the best way forward to solve a problem
- exploring and generating original ideas to find imaginative solutions to problems
- selecting the best tools and techniques to use to solve a problem
- appropriate use of media to convey meaning
- use of planning techniques to complete tasks in an organised and timely way

Key Stage 5:

At Key Stage 5 we offer an A Level course in Computer Science and the Level 3 Cambridge Technicals in IT.



Our Computer Science qualification will above all else be relevant to the modern and changing world of computing. The course focuses on programming with the emphasis on the importance of computational thinking as a discipline.

- It puts computational thinking at its core, helping students to develop the skills to solve problems, design systems, and understand human and machine intelligence.
- It applies all the academic principles learned in the classroom to real world systems in an exciting and engaging manner.

The Cambridge Technicals in IT provides students with essential knowledge and skills in IT and cybersecurity. A wide range of units and opportunities for practical and project-based work helps students gain an insight into technological change, global IT infrastructure and legal and security considerations.

If you would like additional information on this subject, please contact Mr S Karunaratne, Head of Department, via email admin@newent.gloucs.sch.uk