Consett Academy – Computing Curriculum 2023-24

SUBJECT INTENT STATEMENT

Computer Science is a vital part of everyday life. Understanding the technology around us, how to stay safe and harness it. Computing covers digital literacy, ICT and Computer Science. Computer Science is making things happen in different ways depending on the technology that you are using. Digital literacy is how to stay safe and use systems effectively, it is to understand the different components that make up our computer systems. ICT is using software to create digital artefacts combining them to produce an outcome that can be used by others.

At Key stage 3 pupils are given a range of opportunities to cover the 3 strands of the curriculum.

The skills and knowledge are built over time and revisit our threshold concepts of:

- Computer Science; Everything is a switch (Binary, data rep), Think like a computer (Computational thinking, major programming constructs), Procedural Programming & Object Oriented
- ICT; What the purpose, Design Conventions, Creating effective digital artefacts
- Digital Literacy; Computing effects our lives, Computing effects the world

Our intent is to allow pupils to develop a passion for our subject with the range of knowledge and understanding that they learn, ensuring that they are engaged and curious about the world of work around them. This will entail a broad and balanced curriculum that allows pupils to be challenged in all 3 strands of our curriculum. This includes:

- Give all students the digital literacy skills to navigate through a connected world understanding the social, moral, ethical and legal impact of computing on themselves and the wider community.
- Foster resilience in challenging problem solving across multiple languages and devices. Teaching pupils to never give up as all solutions are possible.
- Permit students to create and combine multiple digital artefacts for a particular audience and purpose to gain skills in IT which are needed for life.

- Provide links to industry and careers for applications of computing that include lecturing in software engineering, computer science teacher, data analysist, machine learning engineer, web designer, game development, game engineering, software engineering, industrial placements and cybersecurity and digital forensics.

At the end of KS3, pupils should have built the knowledge and skills to be able to use these in the future to a good standard. The KS3 curriculum builds skills needed to use a computer, knowledge and skills needed to create digital artifacts, something that everyone needs to progress in their life and provides a building block into KS4 courses that are offered in schools.

At KS4 pupils are able to build on their knowledge from KS3 where they have learnt about the different stands of Computing and are able to use this knowledge and skills to move into a KS4 course. The courses that we offer cover the strands of the curriculum but have a more focused approach. There is the Computer Science GCSE where pupils understand how computers work and what internal components make up the computer. They also look at networks and how they use networks in business and personally. Pupils will build upon their KS3 text-based programming to create solutions to problems in Python Programming Language. The vocational route, Pearson BTEC Level 3 National Extended Certificate in Information Technology, is to look at the designing of products for a given scenario and also analysing data and modelling the data to show the outcomes.

At the end of KS4, pupils will have a good knowledge of either Computer Science or Information Technology to allow them to move into specific careers in the future.

At KS5 pupils have a choice of AS/A Level Computer Science (OCR) or IT - BTEC Level 3 National Extended Certificate in Information Technology. These 2 courses allow pupils to build on their knowledge and understanding of the KS4 courses in more detail. The end point after taking our KS5 courses would be to look into a profession or move onto university where pupils can take courses in computer science, game development, game engineering, software engineering, industrial placements and cybersecurity and digital forensics.