Nether Stowe School
The ICT/Computing Curriculum

Curriculum intent: our aims and values

Department Vision

At Nether Stowe School we believe that Computing and the use of Digital Technologies is central to the education of all pupils. We aim to give each pupil the opportunity to apply and develop their technological understanding and skills across a wide range of situations and tasks. This will allow pupils to develop their cultural capital and therefore develop their love for the subject and the required future skills.

Pupils are encouraged to develop a confident and safe approach to Computing and the use of Digital technologies, with the understanding of the capabilities and flexibility of their resources. With the knowledge that Computing and Digital Technologies will undoubtedly continue to form a major part in the children's life at home. In further education and places of work, we ensure the Computing and Digital Technologies experiences and abilities that the children are equipped with at Nether Stowe, are effective and transferrable life skills.

We believe that all students should be equipped with the technological skills to succeed in the world of work. Therefore, all students are taught ICT from years 7 to 11. This is to ensure students leave Nether Stowe with a qualification in Digital Technologies.

Aims and Values

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with Mathematics, Science, and Design and Technology, and provides insights into both natural and artificial systems.

The core of computing is Computer Science and Digital Technology, in which pupils are taught the principles of information and computation, how digital systems work, and how to apply this knowledge through programming. Building on this knowledge and understanding, pupils are equipped to use Digital Technology to create programs, systems and a range of content.

Computing and Digital Technology also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, Digital Technology– at a level suitable for the future workplace and as active participants in a digital world.

Also, pupils are given access to study club where pupils can use the technology in school in their own time, this will allow pupils that do not have access to computer systems at home to develop their skills further outside of the classroom learning environment.

Curriculum Implementation

The Computing and Digital Technologies curriculum aims to ensure that all pupils:
1. Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
2. Can analyse problems in computational terms and have repeated practical experience of writing computer programs in order to solve such problems
3. Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
4. Understand the stages of development for example Analysis, Design Implementation, testing and Evaluation
5. Are responsible, competent, confident and creative users Digital Technology to solve problems?

KS3
In KS3 we develop a range of topics from Micro bit, Robot Chick, Scratch and Flash Animation. This topic allows pupils to develop a wide range of skills that prepare them for their future skills. Not only does it teach them the basic of computing it also looks at the basic ICT skills they will need in their Education. In their projects they use a range of applications from work, Desktop publishing and PowerPoint in order to develop there IT skills through the use of computing. This is often done through design work for their programs or evaluation and promoting what they have done during their project. During KS3 we follow the Waterfall model as this links to DT and computing for example we go through the stages of Analysis, Designs, Implementation, Testing and Evaluation during their KS3 course.

KS4
In Key Stage 4, pupils develop their skills in problem solving and developing their understanding of applications through the use of ICT. Pupils are given a problem of developing User Interfaces for a Business this allow them to draw on their skills from KS3 both in in programming and their application skills. KS4 also prepare students for the next level in education, world of work or apprenticeships by developing their skills usage in applications and applying them to real life problems in order to present reports on their solutions to problems. During this time students learn new applications such as excel through the problem solving of Data Analysis this bring together skills from both IT and Computer Science skills in order to find solutions and make predictions. These activists give pupils a board range of skills in order to prepare them for the next stage whether they go onto further education or the world of work

In Year 10 and 11, pupils are regularly exposed to live modelling and examples of 'What a good one looks like' to enable students to see the key ingredients of good answers. Across this Key Stage, it is expected that pupils will build up familiarity with the wide range of exam questions, which are present within a Digital Technologies Exam paper.

How do we monitor and evaluate the impact of the curriculum?

The curriculum impacts on children in a number of ways, firstly it will provide students with all the required ICT skills in order to support them in the world of work or extended education. It teaches them how to use a wide range of applications and how to apply them to real life problems within the real word.

The curriculum also develops their creative understanding where they develop their own ideas based on a project brief allowing them to be creative and think outside of the box or normal rules.

It also develop their understanding of how to problem solve in order to find solutions to problems that other people cannot, this allows them to draw a range of ICT skills together in order to support this process and apply them in different situations and Subjects.

All the skills they have learned within the 5 year program of ICT has develop transferal skills that can be applied to any subjects or any life problems and there for preparing our students for their challenges in careers or further education.

Assessment takes place on a regular basis across the department in relation to a whole school policy of progress checks and milestones. Progress checks review their progress so far in the project and identify areas that they need to improve in the projects. Milestones look at the whole project and assess the standard they have reached throughout the whole project.

Do Now' activities are often used as retrieval practice and to assess the impact of home learning. In ICT/ Digital Technologies DNAs. Low stakes testing is used to embed knowledge recall. The stretch will usually be based on concepts taught in previous topics or a few lessons previously. The idea is to build up students long term memory of key facts needed support learning. If it is evident that common knowledge has not been retained, the teacher can then arrange a time to re-deliver the information in a different way so that this gap in key content can be addressed.

'Red Zone' activities are used regularly across all year groups in order to give the pupils the opportunity to complete independent practice and this also gives teachers the opportunity to assess whether or not the learning over the most recent lessons has had the desired impact with the class. Teachers are encouraged to reflect on the work produced by students during Red Zone tasks in order to potentially make changes to future lessons, which are delivered to further increase the impact of the learning taking place.

Within lessons, teachers regularly use questioning in order to assess the impact of the learning upon the class. This allows another opportunity for pupils to check the understanding of pupils and to allow lessons to be reflected on or altered in the future to further improve the learning experience.