ICT/Computing

Everyone should know how to program a computer, because it teaches you how to think" – Steve Jobs

In ICT & Computer Science pupils will learn and discover a variety of new and exciting skills which can be used practically beyond the classroom.

Our aim at KS3 as a department is to stay ahead of the curve and educate pupils on current trends, ensuring pupils are prepared for the wider world whether or not they choose to study the subject at KS4. Additionally, we understand that ICT & Computer Science are very different subjects so aim to teach a balance of both, allowing pupils to further their knowledge in areas that particularly interest them.

What Year 7 Pupils Learn About

In Year 7 pupils will have one lesson of ICT & Computer Science. The main objective in Year 7 is to build pupils confidence using the day-to-day software they will use at Hardenhuish, while also introducing them to newer concepts such as programming and computational logic. At Hardenhuish we understand the importance of online safety in our current society and therefore dedicate a term to the risks that exist in our digital age and, more importantly what pupils can do if they have concerns, worries or problems.

Term 1: **ICT 101** (Use of Office such as PowerPoint, OneNote, Outlook)
Term 2: **Introduction to programming** (Using Scratch)
Term 3: **Online Safety** (Covering digital footprints, online threats, digital hate + sexting)
Term 4: **Binary logic** (Looking at how computers think using binary)
Term 5 + 6: Python programming (Learning how to code using a text based language)

The Learning in Years 8 and 9

Year 8

In Year 8 pupils will have two lessons of ICT & Computer Science each week. Pupils will build on skills learnt in Year 7 (such as Python programming and use of software) whilst learning new skills (such as app development and advanced Spreadsheets). The Year 8 program is very distinctively split between ICT & Computer Science, so pupils should at this point start to get a feeling for which subject is their preference.

Term 1: **Spreadsheets** (Using Excel to learn how to manage data and use formulas)

Term 2: **Python Programming** (Building on the programming in Year 7 and looking at new skills using Python)

Term 3: **Carousel** (Pupils complete a range of smaller units such as Online Safety, Image editing, Sound manipulation and Microbits)

Terms 4: App development (Pupils learn to use a platform called 'Thunkable' to build mobile apps)

Term 5: ICT skills (Pupils look deeper into the use of Office software and how it can be used to help them in all areas of their school life)

Term 6: **Theme park project –** (Learning how to run a promotional campaign using a range of ICT skills)

Year 9

In Year 9 we encourage pupils to think about their GCSE option choices and base each term around the ICT or Computer Science GCSE. At this point pupils should have an idea of which option they prefer and can work towards this on the projects they complete. Although GCSE in ICT/Computer Science is optional, we believe many of the skills taught can be applied to other areas of school. Additionally, pupils will revisit
online safety, explore cyber security and think about how ICT can help them in their future GCSE options.

In Year 9 pupils also have the opportunity to visit Bletchley Park to learn about Computer Science Pioneers like Alan Turning, and how teams of code breakers help decipher messages to help during the second world war.

Other Learning Opportunities Outside the Classroom

Year 9 option – Computer Science
We offer Year 9 pupils an alternative option which they study alongside their conventional ICT lessons. Pupils who enjoy Computer Science as a subject and feel they need more time to explore the subject would find this option rewarding. Within the lessons will expand their knowledge on Computer Science concepts such as programming and theory, whilst also using software to develop projects such as games and apps for a specific audience.

ICT/Computing clubs and opportunities
As a department we also run extra-curricular clubs where pupils can go beyond on the classroom to work on a project that they are enthused and passionate about. These include:
-   ICT & Computing club – Pupils can come along and learn some news skills or work on their own projects
-   Minecraft for education club

There are also a number of competitions that we run within Hardenhuish school which include:
-   UK Bebras
-   Cyber First Girls
-   Perse coding team challenge

As a school we also have access to technology that pupils can use to develop their own projects within clubs if they wish, these include:

-   Lego robotics
-   Microbits
-   VR ready machine for VR development
-   Kitronic Robotics kits