



ICT and Computer Science

Subject Intent

The ICT and Computer Science curriculum at Bishops' develops students' knowledge of technology in a way that they can independently adapt to an ever changing technological landscape. The skills they learn can be transferrable into other areas and throughout KS3 we develop and reinforce critical thinking and logic skills that extend into other subject areas and the wider world. Through understanding basic computing principle and use of multiple software platforms students will gain a deeper knowledge of how technology impacts the world around us and are given the opportunity to explore different capabilities of technology as well as reinforcing the safe and ethical use of technologies.

Core Principles

- **Dignity**

From the start of KS3 students are given responsibility over their own learning and supported in building their talents and self-esteem within the subject. Looking at the wider world and wider community students have topics that will help them understand how to build positive relationships when communicating with technology and appreciate the diversity that comes with access to technology.

- **Respect**

Through teamwork topics, students can utilize their teamwork skills and build on their idea of community and democracy through group decision making. There are opportunities throughout KS3 for students to understand how to use technology safely and respectfully whilst respecting other people's opinions and views.

- **Wisdom**

Looking at how technology is used by different industries and people, students explore the wider world and are given the opportunity to consider the moral, ethical and legal aspects of use of technology. Building on students' curiosity is part of project work and providing students with basic information to transform into unique programs or final pieces gives students the opportunity to flourish.

- **Knowledge**

Students are encouraged to question and explore learning in topics with time embedded into topics for tasks that will challenge all students and work through contextual scenarios to apply learning to real world contexts and therefore gain a deeper understanding.

- **Skills**

Through embedding independence and logical thinking, we aim to provide students with the tools to adapt to different technologies. Opportunities for teamwork provide students with teamwork experience and extended projects allow for students to develop their initiative and organization. The collaboration and problem solving aspects of the curriculum aim to support whole person development for students.

- **Aspirations**

Technology is ubiquitous in society and we aim to enable students to use technology in a positive way and see how it can be used in a supportive role for many people. Looking at social, ethical and moral use of technology we develop students' tolerance and understanding of others and address issues in a way that allow students to continue to be positive digital citizens.

- **Hope**

Through our schemes of learning and extra-curricular provision we want to feed students ambitions and help the flourish through opportunities they are given. Providing students with chances to see technology beyond the classroom and social aspects we aim to help students see the different options of future learning or employment within the technology sector and embed into the subject topics or challenges that provide a platform for students

Key Stage 3 Programmes of Study						
Terms	Year 7	Map	Year 8	Map	Year 9	Map
1	How do we use computers in school and how to we keep safe on computers? <i>Introduction to the school network, SMHW and Office 365</i> <i>Baseline Assessment</i> <i>Storing and retrieving files</i> <i>Searching for information on the internet</i>		How do computers store information? <i>Data representation</i> <i>Binary</i> <i>Images, Sound and Text</i>		How can we protect computers from malicious harm? <i>Codebreaking</i> <i>Social engineering</i> <i>Threats (physical and non-physical)</i> <i>Prevention</i> <i>Software- databases</i>	
2	How to Stay Safe Online Bebras Challenge 1 week <i>Understanding and identifying risks online</i> <i>Software- Microsoft Sway and Audacity</i> <i>Presenting and editing information</i>		How did the internet happen? <i>Introduction to the Internet</i> Bebras Challenge 1 week <i>Network topologies</i> <i>Network Hardware</i> <i>World Wide Web and Browsers</i>		How do businesses use computers? Bebras Challenge 1 week <i>Software- Spreadsheets</i> <i>Formulas- basic and advanced</i> <i>Filtering</i> <i>Macros</i>	
3	How do computers think? <i>Algorithms</i> <i>Software- Microsoft 365 Word, Draw.io</i> <i>Basic Sorts/searches</i>		Apps for Good <i>Project Life Cycle</i> <i>Working in a team</i> <i>Basic app design/development</i>		How do you make a computer program? <i>Programming in Python</i> <i>Project life cycle</i> <i>Programming techniques including previous learning from Years 7/8 and functions</i> <i>Software- Python</i>	
4	How can we use computers to complete a project? <i>Marketing Project</i> <i>Project life cycle</i> <i>Software- Office 365- PowerPoint, spreadsheet and Publisher</i>		Apps for Good <i>Project Life Cycle</i> <i>Working in a team</i> <i>Basic app design/development</i>		How do you make a computer program? <i>Programming in Python</i> <i>Project life cycle</i> <i>Programming techniques including previous learning from Years 7/8 and functions</i> <i>Software- Python</i>	

5	<p>How do Computers Work? <i>Hardware and Software</i> <i>Memory/Storage</i> <i>CPU</i></p>	<p>How are computers used by different people? <i>ICT in Society web site</i> <i>Software- Serif WebPlus</i> <i>Researching how ICT is used in different contexts (Schools, Public Sector, Supermarkets, Home (e-safety)</i> <i>Environmental and cultural impacts of ICT</i></p>	<p>iDEA Award- showing what I know about computers <i>Working towards the Bronze award on the iDEA website</i></p>	
6	<p>How do you make a basic computer program? <i>Microbits programming project</i> <i>Basic programming terminology and constructs</i></p>	<p>How do you create a computer program? <i>Python programming project</i> <i>Basic python programming including inputs, outputs, selection and iteration</i></p>	<p>iDEA Award- showing what I know about computers <i>Working towards the Bronze award on the iDEA website</i></p>	

Key Stage 4 Programmes of Study- Computer Science

Terms	Year 10	Map	Year 11	Map
1	Introduction to the course 1.1 Systems Architecture 1.8 Ethical, legal, Cultural and environmental 2.1 Algorithms 2.2 Programming Techniques		2.5 Computational Logic Exam technique focus- using Year 10 learning to understand the exam papers	
2	2.4 Computational Logic 2.6 Data Representation 1.2 Memory 1.3 Storage		Preparing for PPE's Review of Year 10 learning	
3	2.3 Producing Robust Programs 1.7 Systems Software 1.4 Wired and Wireless Networks 1.5 Network Topologies, protocols and layers Programming Practice		PPE recap and feedback Common misconceptions and reviewing weaker topics	
4	Programming Practice 1.5 Network Topologies, protocols and layers 1.6 Systems Security		Exam paper walkthroughs	
5	1.6 Systems Security Preparing for the Programming Project		PPE recap and feedback Common misconceptions and reviewing weaker topics Exam paper walkthroughs	
6	Programming Project			

Key Stage 4 Programmes of Study- IT Cambridge Nationals

Terms	Year 10	Map	Year 11	Map
1	Unit 1 – Project Life Cycle Unit 4 – Project data management (Spreadsheet skills)		Controlled Assessment Exam Preparation	
2	Unit 2 – Project Risk Management Unit 4 – Project data management (Database skills)		Exam Preparation PPE exam and review Controlled assessment	
3	Unit 3 – Project Phase Management Unit 4 – Project Data Management (Word skills)		Review of Year 10 learning	
4	Unit 5 – Project Documentation Sample Coursework Assignment		Exam walkthroughs	
5	Unit 6 – Project Evaluation		Resit of exam if required	
6	Controlled Assessment prep and walkthrough (Merseyrail Scenario)			

Key Stage 5 Programmes of Study- BTEC Level 3 Information Technology

Terms	Year 12	Map	Year 13	Map
1	Introduction to the course Unit 6- Website Development Learning Aim A Unit 3- Social Media in Business Learning Aim A		Unit 1- IT systems Unit 2- Creating systems to manage information- introduction to databases, tables, relationships, validation, queries	
2	Unit 6- Website Development Learning Aims A and B Unit 3- Social Media in Business Learning Aims A and B		Unit 2- Creating systems to manage information- creating reports, forms, testing and evaluation	
3	Unit 6- Website Development Learning Aim B Unit 3- Social Media in Business Learning Aim B		Unit 1 exam Unit 2 exam Unit 1 reviewing learning for re-sits Unit 2 reviewing learning for re-sits	
4	Unit 6- Website Development Learning Aims B and C Unit 3- Social Media in Business Learning Aims B and C		Unit 1 reviewing learning for re-sits Unit 2 reviewing learning for re-sits	

5	Unit 6- Website Development Learning Aim C Unit 3- Social Media in Business Learning Aim C	Unit 1 reviewing learning for re-sits Unit 2 reviewing learning for re-sits Unit 2 re-sit	
6	Unit 6- Website Development Learning Aim C Unit 3- Social Media in Business Learning Aim C Unit 1- IT systems introduction Unit 2- Creating systems to manage information- basic databases	Unit 1 re-sit	