

'The Aspiring Information Technologist'

KS4/5



**CHELTENHAM
BOURNSEIDE
SCHOOL**

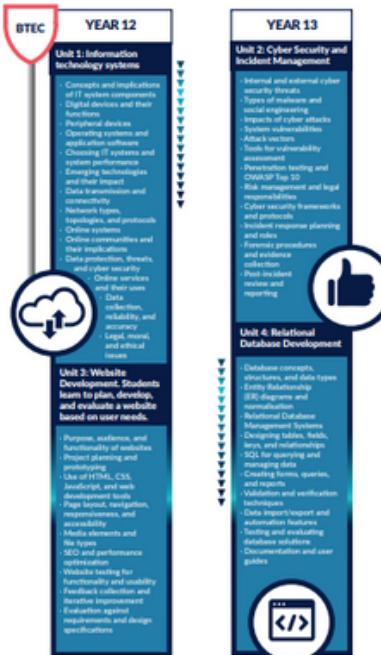
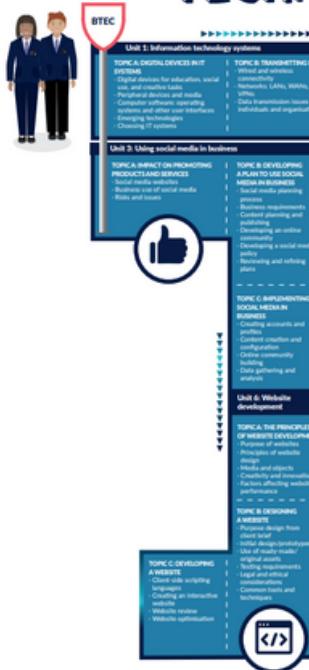


Inspiring lives through learning

'The Aspiring Information Technologist'



INFORMATION TECHNOLOGY



'The Aspiring Information Technologist'



Welcome to the Aspiring Information Technologist Pathway. I'm delighted that you've chosen to take this exciting opportunity to deepen your knowledge and skills in one of the world's fastest growing and most essential industries.

If you're curious about how technology powers the world around us—from secure networks to interactive websites and data-driven systems - this pathway is the perfect place to start. This pathway is designed for students who enjoy solving problems, working with digital tools, and creating practical solutions that make a difference in the real world.

Whether your interests lie in IT systems, cybersecurity, web development, relational databases, coding, or network infrastructure, this pathway will give you the chance to explore real-world applications and develop the technical and professional skills that employers and universities truly value.

In addition to gaining strong academic foundations and relevant industry qualifications, universities and employers look for candidates who demonstrate genuine interest and enthusiasm for information technology beyond the classroom.

Completing this pathway will help you stand out by enabling you to:

- Explore industry trends by reading articles, white papers, and case studies
- Listen to podcasts and watch documentaries about cybersecurity, web technologies, and modern IT systems
- Follow industry experts and stay current with tech advancements via professional social media platforms
- Take part in coding, cyber, or IT-related competitions and challenges
- Learn to build websites, secure systems, and develop and manage relational databases
- Create and showcase personal IT projects and solutions with real-world relevance
- Gain hands-on experience through IT-related work placements or volunteering

Come and speak to a member of the Computing team if you want more information. Good luck.

Mr Hunt
Head of Computing

Reading list

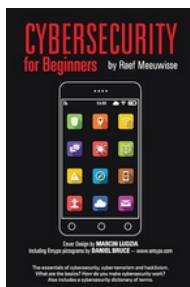
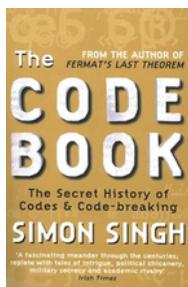
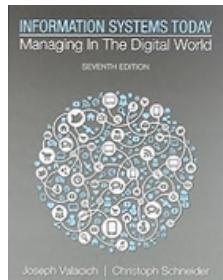
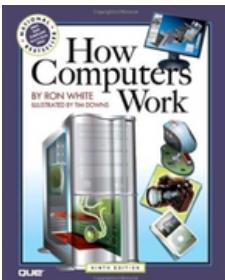
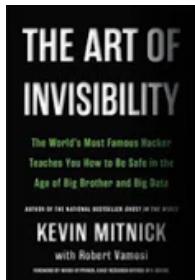


Information systems

- **The Art of Invisibility** - *Kevin Mitnick*
(for real-world implications of IT security)
- **How Computers Work** - *Ron White*
- **Information Systems Today: Managing in the Digital World**
Joseph Valacich and Christoph Schneider

Cyber security and incident management

- **The Code Book** - *Simon Singh*
(Intro to cryptography and data protection)
- **Cybersecurity for Beginners** - *Raef Meeuwisse*



Reading list



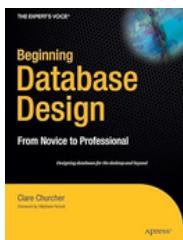
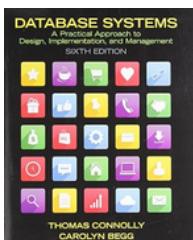
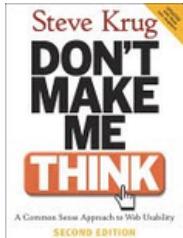
Website development

- **HTML and CSS: Design and Build Websites** – Jon Duckett
- **Don't Make Me Think** – Steve Krug
(A common sense approach to web site usability)
- **Accessibility for Everyone** - Laura Kalbag
(How to make the web accessible for everyone)
- **w3schools.com**

Free interactive tutorials on HTML, CSS, and JavaScript

Database development

- **Database Systems: A Practical Approach to Design, Implementation, and Management** – Connolly & Begg
- **Beginning Database Design: From Novice to Professional**
Clare Churcher
- **Learning SQL: Master SQL Fundamentals** - Alan Beaulieu



Competitions



Microsoft Certification for Students

With 91% of hiring managers using certifications as a criterion when evaluating candidates, it's clear that employers value certifications. Prove your technical know-how and stand out from the crowd with a Microsoft Certification.



BAFTA

BAFTA

BAFTA Young Game Designers

Inspiring and celebrating the next generation of game designers.

Want to kick start your career in games? This is the place for you. Every year BAFTA runs the Young Game Designers competition to inspire those who are passionate about games. Creating a space for imaginations to thrive, it's a chance for 10-18-year-olds to design, develop and present new game ideas to the world.

Competitions



Raspberry Pi
Foundation

The UK Bebras Challenge

The Bebras Challenge introduces computational thinking to students worldwide. This exciting challenge takes place in schools, under the supervision of teachers, over a two-week period every November. In the UK, the challenge is open to all young people aged up to 19. Each participant has 45 minutes to tackle a series of interactive tasks, designed to encourage logical thinking and problem-solving skills appropriate for their age group.



National Cyber
Security Centre



The NCSC provide short courses designed to introduce the younger generation to the world of cyber security.

For 14 - 17 year olds, these courses are called:

- [CyberFirst Defenders](#)
- [CyberFirst Futures](#)
- [CyberFirst Advanced](#)

w3schools.com

Free interactive tutorials on HTML, CSS, and JavaScript



Listen and Watch



Podcasts



Risky Business

Award-winning podcasts, newsletters and YouTube videos about cybersecurity.



Network Break

Network Break keeps you informed with fast, focused analysis of IT news, products and tech trends.



Spark with Nora Young

Nora Young helps you navigate your digital life by connecting you to fresh ideas in surprising ways



The WAN Show

Tech YouTubers Linus Sebastian and Luke Lafreniere meet to discuss current events in the tech world



Darknet Diaries

Explore true stories of the dark side of the Internet with host Jack Rhysider as he takes you on a journey through the chilling world of hacking, data breaches, and cyber crime.

Listen and Watch



Films/YouTube/TV



The Imitation Game

During the Second World War, mathematician Alan Turing and his team of cryptographers set out to decipher the German Enigma code. (Film)



Pirates of Silicon Valley

Drama film that chronicles the fierce rivalry between Steve Jobs and Bill Gates, focusing on the founding of Apple and Microsoft and their roles in the personal computer revolution



The Social Network

Harvard sophomore Mark Zuckerberg pursues an idea that propels him to internet success, bringing in legal trouble and costing him friendships. (Film)



Jobs

After revolutionizing the home computer, Steve Jobs and his friend Steve Wozniak jointly launch Apple Inc. But as a leader and a visionary, Jobs' rocky tenure leads to his ouster from the company. (Film)



Tech Now

Tech Now explores the latest innovation and technology shaping our lives. Bringing you the inside track on global trends and advancements happening in the tech space today. ([BBC iPlayer](#))



The Social Dilemma

Documentary-drama that explores the harmful impacts of social media, arguing that platforms are designed to be addictive and manipulative to maximize profit.



Black Mirror

In an abstrusely dystopian future, several individuals grapple with the manipulative effects of cutting edge technology in their personal lives and behaviours. (Netflix)

Listen and Watch



Social media

@TheCyberSecHub - Claims to be the world's premier cyber security portal. Regularly updated with the latest cyber news

@NCSC - National Cyber Security Centre. Part of the UK's intelligence & cyber agency

@GCHQ - The UK's intelligence, security and cyber agency, helping to keep the UK safe online and in the real world.

@BCS - The British Computer Society The Chartered Institute for IT, The professional body behind The people behind our amazing digital world

@Wired - Articles that focus on how emerging technologies affect culture, the economy, and politics

@TheHackersNews - A trusted source for cybersecurity news, insights, and analysis

@computerphile - YouTube videos about computers and the internet and stuff. Sister project to @numberphile

@dailywebdesign - An Instagram account where you can join a creative community and keep up to date with the latest design and tech news

Work Experience and Events



The digital and IT sector offers a wide range of exciting and rewarding work experience opportunities. These placements provide a valuable chance to move beyond the classroom and explore how your skills can be applied in real-world settings.

Gaining experience in a computing-related environment comes with numerous advantages:

- Hands-on learning – You'll gain practical knowledge of how IT systems, tools, and software are used in day-to-day business operations.
- Career exploration – Work experience can help you identify which areas of IT—such as cybersecurity, data analysis, or software development—most spark your interest.
- Improved confidence and communication – Collaborating with professionals helps build your interpersonal skills, including teamwork, communication, and problem-solving.
- Enhanced employability – Having real-world experience gives your CV an edge and strengthens applications for university courses or apprenticeships.

A variety of businesses and organisations offer meaningful opportunities in the computing field, including:

- IT support services
- Software and app development companies
- Web design and digital media agencies
- Cybersecurity firms
- Game development studios
- E-commerce businesses
- Finance and insurance providers
- Engineering and manufacturing companies
- Government departments and local authorities
- Marketing and communications agencies
- School-based IT support teams

Work Experience and Events



[Class Chats: Verifying AI Knowledge | Springpod](#)

Step into the role of a tech professional at Amazon. Learn why verifying AI-generated information is essential, and how critical thinking makes AI systems more reliable, trusted and safe.



[Fujitsu: Cybersecurity In this Cybersecurity](#)

Sprint with Fujitsu, you'll put your problem-solving skills to the test! You'll take on the role of a Cybersecurity Specialist.



[Virtual Work Experience with Thales | Springpod](#)

Covering the aerospace, space, cyber security and digital identity, defence and security sectors, Thales contribute to the safety and security of nations across the globe.



Research and Experience Placements Placements relating to an area of science, quantitative social science, computing, technology, engineering or maths - or a combination!



Work Experience | Softwire The work experience placements are for GCSE and sixth form students (typically years 10-13) interested in a career in Software Development.



Opportunities | NCC Group PLC Bournside School is lucky to have very strong links with NCC Group. If you would like work experience please email careers@bournside.com.



The Careers Team at Bournside deliver regular Inspire Breakfast Lectures. Open to students in Year 10 - 13, these business-focused breakfasts invite speakers from all corners of industry to share their professional experiences and valuable insights with Bournside students over breakfast; opening our eyes to the opportunities available across many industry sectors.

[Take a look at upcoming speakers and reserve your space here.](#)



