

Southern International School Computing Curriculum: Journey on a page 2024/2025

<p>Year 7: KS3</p> <ul style="list-style-type: none"> ● Autumn 01 - The nature of technology: Storing digital data, Digital literacy: Staying safe online ● Autumn 02 - Computational thinking: Programming languages ● Spring 01 – Programming: It all adds up ● Spring 02 – Multimedia: Make a podcast ● Summer 01 - Numbers and data: Business data table 	<p>Year 8: KS3</p> <ul style="list-style-type: none"> ● Autumn 01 - The nature of technology: Understanding networks, Digital literacy Computers and learning ● Autumn 02 - Computational thinking Team Manager ● Spring 01 – Programming Atom Finder ● Spring 02 – Multimedia:Creating and sharing digital media assets ● Summer 01 - Numbers and data: Mobile Medical Services 	<p>Year 9: KS3</p> <ul style="list-style-type: none"> ● Autumn 01 - The nature of technology: Inside the CPU, Digital literacy: Dilemmas ● Autumn 02 - Computational thinking: Artificial intelligence ● Spring 01 – Programming: The fish pond plan ● Spring 02 – Multimedia:Creating a multimedia news site ● Summer 01 - Numbers and data: Managing projects
<p>Year 10: ICT KS4</p> <ul style="list-style-type: none"> ● Autumn 01 - Types and components of computer systems, Input and output devices, Storage devices and media ● Autumn 02 - Networks and the effects of using them, The effects of using IT ● Spring 01 – ICT applications, The systems life cycle, Safety and security, Audiences, Communication, File management, ● Spring 02 – Images, Layout ● Summer 01 - Styles, Proofing 	<p>Year 11: CS KS4</p> <ul style="list-style-type: none"> ● Autumn 01 – 5. The internet and its uses & 6. Automated and emerging technologies, 5.1 The internet and the world wide web, 5.2 Digital currency, 5.3 Cyber security, 6.1 Automated systems, 6.2 Robotics, 6.3 Artificial intelligence, ● Autumn 02 – 7 Algorithm design and problem Solving, 8.2 Arrays, ● Spring 01 – Programming, 8.1 Programming concepts, 8.3 File handling, ● Spring 02 – Chapters review, exam prep ● Summer 01 – exam prep - IGCSE exams 	
<p>Y12: CS AS KS5</p> <ul style="list-style-type: none"> ● Autumn 01 - Information representation and multimedia, Communication ● Autumn 02 - Hardware, Processor fundamentals, System software, Security, privacy and data integrity ● Spring 01 – Ethics and ownership, Databases, Algorithm design and problem solving ● Spring 02 – Data types and structures, Programming ● Summer 01 - Software development, AS exams 	<p>Y12: CS A KS5</p> <ul style="list-style-type: none"> ● Autumn 01 - Data representation, Communication and internet technologies ● Autumn 02 - Hardware, System software and virtual machines ● Spring 01 – Security, Artificial intelligence (AI) ● Spring 02 – Computational thinking and problem-solving, ● Summer 01 - Further programming, A exams 	
<p>Subject Curriculum Intent: ‘Excellence in computing ’</p> <p>By the end of Oxford International Lower Secondary Computing, students should be able to:</p> <ul style="list-style-type: none"> ● Know and understand the key concepts and principles of Computing. ● Apply knowledge and understanding of the key concepts and principles of Computing. ● Analyse problems in computational terms. ● Plan creative solutions to problems. ● Develop confident and responsible use of modern information technologies. <p>SIH Computing students will learn: Lower Secondary Years 7 - 9</p> <ul style="list-style-type: none"> ● Use sequence, selection and repetition in programs. Select, use and combine a variety of software on a range of digital devices. Understand computer networks and how they provide multiple services. Use search technologies. Detect and correct errors in algorithms and programs.Design, write and debug programs that accomplish specific goals. Use technology safely, respectfully and responsibly. 		

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- *The SIH curriculum in the IGCSE Computer Science course can be broken down into the theory of computer science and practical problem-solving and programming. Within the theory of computer science, students will cover data representation; communication and Internet technologies; hardware and software; security; and, ethics. Meanwhile, within practical problem-solving and programming, students will cover algorithm design and problem-solving; programming; and, databases.*

SIH ICT will learn: Upper Secondary Years 10 -11

Cambridge IGCSE Information and Communication

Technology provides learners with the ability to use a broad range of ICT skills and encourages knowledge and understanding of the development of ICT systems, networks and their safe use.

This course provides learners with the ability to understand the rapid change of ICT in a technology-based world and the impact ICT has on the world.

Learners in a modern ICT based world need to have the ability to gather, process and manipulate data; this course helps learners to fulfil this.

Our approach in Cambridge IGCSE Information and Communication Technology encourages learners to be:

confident, in applying knowledge and understanding of ICT technologies and using skills to solve ICT

problems, both as individuals and working with others

responsible, for themselves, responsive to and respectful of others with particular consideration to physical safety and eSafety reflective, in their ability to learn and develop ICT skills

innovative, in the way that they use ICT-based solutions to solve problems and identify alternative solutions to solve problems engaged, socially, in the work that they undertake and to interrogate unfamiliar situations to provide ICT-based solutions.

SIH Computer Science students will learn: Upper Secondary Years 11

- *Cambridge IGCSE Computer Science helps learners develop an interest in computational thinking and an understanding of the principles of problem-solving using computers. They apply this understanding to create computer-based solutions to problems using algorithms and a high-level programming language. Learners also develop a range of technical skills, and the ability to effectively test and evaluate computing solutions.*
- *Studying Cambridge IGCSE Computer Science helps learners appreciate current and emerging computing technologies, the benefits of their use and recognise their potential risks. It provides an ideal foundation for progression to Cambridge International AS & A Level and is valuable for other areas of study and everyday life.*

SIH Computer Science students will learn: Upper Secondary Years 12 -13

Following a Cambridge International AS & A Level programme helps students develop abilities which universities value highly, including:

- a deep understanding of their subjects
- higher order thinking skills – analysis, critical thinking, problem solving
- presenting ordered and coherent arguments
- independent learning and research.

Cambridge International AS & A Level Computer Science encourages learners to meet the needs of Higher Education courses in computer science as well as twenty-first century digital employers. It encourages learners to think creatively, through applying practical programming solutions, demonstrating that they are effective users of technology.

Our approach in Cambridge International AS & A Level Computer Science encourages learners to be:

- confident, using a range of technology and programming paradigms
- responsible, using technology ethically
- reflective, as programmers, improving their own programming solution
- innovative, creating efficient solutions to problems
- engaged, in technology, how it is built and how software solutions are developed.

