

Southern International School Computing Curriculum: Journey on a page 2023/2024

2

| | | |
|---|--|--|
| <p>Year 7: KS3</p> <ul style="list-style-type: none"> ● <i>Autumn 01 – Getting started</i> ● <i>Autumn 02 – Introducing spreadsheets</i> ● <i>Spring 01 - Computing: past, present and future</i> ● <i>Spring 02 – Computing components</i> ● <i>Summer 01 - Programming in Python: sequence</i> | <p>Year 8: KS3</p> <ul style="list-style-type: none"> ● <i>Autumn 01 - Advanced spreadsheets</i> ● <i>Autumn 02 – Algorithms</i> ● <i>Spring 01 - Programming in Python: selection</i> ● <i>Spring 02 – Internet safety, cyber security and encryption</i> ● <i>Summer 01 - Binary and computer logic</i> | <p>Year 9: KS3</p> <ul style="list-style-type: none"> ● <i>Autumn 01 - Sound and video editing</i> ● <i>Autumn 02 - Designing websites</i> ● <i>Spring 01 – Networking and the Internet</i> ● <i>Spring 02 – Programming in Python: iteration</i> ● <i>Summer 01 - The ethics of computing</i> |
| <p>Year 10: KS4</p> <ul style="list-style-type: none"> ● <i>Autumn 01 - 1. Data representation 1.1 Number systems, 1.2 Text, Sound and Images, 1.3 Data storage and compression</i> ● <i>Autumn 02 – 2.0 Data transmission 2.1 Types and methods of data transmission, 2.2 Methods of error detection, 2.3 Encryption</i> ● <i>Spring 01 - 9 Databases & Boolean Logic 9 Databases, 10 Boolean logic</i> ● <i>Spring 02 – 3.Hardware, 3.1 Computer architecture, 3.2 Input and output, Devices, 3.3 Data storage, 3.4 Network hardware</i> ● <i>Summer 01 - 4. Software, 4.1 Types of software and interrupts, 4.2 Types of programming language, translators and integrated development environments (IDEs)</i> | <p>Year 11: KS4</p> <ul style="list-style-type: none"> ● <i>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,</i> ● <i>Autumn 02 – 7 Algorithm design and problem Solving, 8.2 Arrays,</i> ● <i>Spring 01 – Programming, 8.1 Programming concepts, 8.3 File handling,</i> ● <i>Spring 02 – Chapters review, exam prep</i> ● <i>Summer 01 – exam prep - IGCSE exams</i> | |
| <p>Subject Curriculum Intent: ‘Excellence in computing’</p> <p>By the end of <i>Progress in Computing</i>, 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"> ● <i>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.</i> ● <i>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.</i> <p>SIH Computer Science students will learn: Upper Secondary Years 10 - 11</p> <ul style="list-style-type: none"> ● <i>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.</i> ● <i>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.</i> | | |