Curriculum Map 2024-2025 Computing

Digital technology has a profound impact on society and modern life; the computing curriculum at SHS gives pupils the opportunity to develop a foundation in the skills they need to live, learn and work in the 21st Century. The curriculum aims to develop students' interest in and enjoyment of Computing and to develop skills, knowledge and understanding of key concepts and practices in the subject. Pupils use a range of Computing hardware and software to create digital media products (including computer programs). Other units allow students to develop transferable skills in, and informed opinions about their use of technologies and a growing awareness of the impact of IT and Computing in society and the importance of responsible/safe use of the internet and other technologies.

Content and skills

Term	Year 7	Year 8	Year 9	Year 10	Year 11
Autumn	**Content** 1. **Intro to SHS network**; Office 365; SMHW; E-safety (passwords; using the internet and social media; managing your online reputation & digital footprint); create an e-safety leaflet in Publisher. **Skills** File management skills; software skills (Office 365/DTP) **Key Questions** How do we keep safe while online? **Personal development:** This unit develops pupils' understanding of how to stay safe online and how to be responsible users of technology.	**Content** 1. **Intro to web site design**; features of good web site design; learn the basics of HTML to create a simple web page; create a web site using web design software (eg RocketCake). **Skills** Software skills (Notepad; Rocketcake; HTML; planning (structure diagram, visualisation diagram) **Key Questions** What are the features of good web design? **Personal development:** Develop understanding of accessibility and the internet; becoming creators of digital media as well as consumers of it	**Content** Students learn about the digital media industry's sectors, products and conventions (exam) Preparation for NEA in visual identity and digital graphics **Skills** Digital media planning methods (moodboards, mindmaps, visualisation diagrams, storyboards etc); effective and creative use of image editing software **Key Questions** What are the important issues in the digital media industry? How do we create digital media? **Personal development:** Representation in the digital media industry; diversity and inclusion; ethics of photo-editing; readability/accessibility of	**Content** Computer Science (Edexcel 1CP2), pupil learn about the theory of computer systems, networks and the impacts of ICT in society and how to design, write and test computer programs. **Skills** Python programming Error checking Code commenting **Key Questions** How do computers work? How do you write efficient computer programs? **Personal development** Network security and the impacts of ICT in society. Ethical issues and legislation relating to computers and digital technologies.	**Content** **iMedia** Pupils plan, design, make and review 2 digital media products - (visual identity and digital graphics, interactive digital media) for non-examined assessment. **Skills** Image editing skills in Photoshop; advanced multimedia skills in Powerpoint; creating a digital media product to meet a client brief. **Key Questions** How to interpret a client brief; how to plan a digital media product to meet the needs of the client brief. **Personal development** Health and safety in the digital media industry; legislation relating to the production and publication of digital media.

			digital media; becoming creators of digital media as well as consumers of it; acknowledging sources/copyright/plagiarism		**iMedia Year 11** Pupils prepare for the external exam **Skills** How to answer a mix of short answer, mcq and long answer exam questions based on a given scenario. **Key Questions** What are the important sectors and issues in the digital media industry? Types, characteristics and codes of different digital media. **Personal development** Media industry sectors and job roles; Health and safety in the digital media industry; legislation relating to the production and distribution of digital media. Regulation and certification
Spring	2. **Intro to computer systems**; hardware (input/output devices); software; algorithms & pseudocode; flowcharts; trace tables; binary. **Skills** How to write algorithms, pseudocode and flowcharts to plan computer programs.	2. **Data representation**: binary conversions; binary addition; how images are represented. **Skills** How to convert denary to binary numbers; how to add two binary bytes. **Key Questions**			**Year 10 Computer Science** Computational thinking (algorithms, pseudocode, trace tables, truth tables); Data representation (binary, hexadecimal, character encoding, sound, images); Systems architecture, networks; Programming.

	How to convert denary to binary numbers. How to use trace tables to record program outcomes. **Key Questions** What is a computer system? How do we plan programs? How is data represented in a computer system? **Personal development** Safer Internet Day	How is data represented in a computer system? **Personal development** Safer Internet Day 3. **Networks** (LANS/WANS/topologies /security/network hardware) **Skills** **Key Questions** What are the advantages and disadvantages of different network topologies? How do we keep our data safe over a network? What components are required to build a network? **Personal development:** Network/data security			**Skills** Python programming Error checking Code commenting Binary/hex/ascii conversions See above content **Key Questions** **Personal development** Network security; impacts of ICT in society. Environmental issues; software licensing, social engineering; data protection; Ethical issues and legislation relating to computers and digital technologies.
Summer	3. **Intro to programming in Python turtle**/Microbit; variables; sequence; selection; iteration 4. **Legislation** (DP A; CMA) **& Ethics** (driverless cars) **Skills** Python programming Error checking	4. **Intro to programming in Python**; variables; sequence; selection; iteration; create a quiz in Python; graphical programming (Python turtle) **Skills** Python programming Error checking			**Year 11 Computer Science** Robotics; malware; Intellectual property, technical vulnerabilities; back up and recovery; encryption; programming **Skills** Python programming Error checking Code commenting

	Code commenting **Key Questions** What are the key structures of computer programs? What are the key laws that govern the use of digital media? What are some of the ethical issues surrounding driverless cars? **Personal development** Pupils consider the evolving legislation surrounding the use of computer technologies and some of the ethical issues that arise from the proliferation of computers in all aspects of our lives.	Code commenting **Key Questions** What are the key structures of computer programs? **Personal development** Developing resilience, independence and confidence as learners			Exam practise for online practical programming paper 2 **Key Questions** **Personal Development** Developing resilience, independence and confidence in programming writing techniques; learn to think creatively, analytically, logically and critically to solve computing problems.