



*"A tree planted by streams of water, which yields its fruit in season" (Psalm 1:3)*  
**Wisdom – Hope – Service – Resilience**



## **Curriculum Intent Statement**

### **Department: Computing**

#### **Intent:**

#### **What does the Computing curriculum at The Deanery strive to achieve?**

The Computer Science curriculum is designed to inspire curiosity, creativity, and problem-solving skills in a rapidly evolving digital world. We aim to equip students with the technical knowledge and computational thinking necessary to navigate and shape the future of technology. Through hands-on learning in programming, algorithms, data structures, and cybersecurity, we empower students to become confident digital citizens who can critically evaluate and create technology responsibly.

#### **How do students study Computing at Aureus?**

All students in Years 7–9 study Computing for two hours per fortnight. Each term, they explore a new topic, building confidence in their use of technology. Lessons are a blend of practical and theoretical activities, designed to develop both problem-solving skills and a deeper understanding of computing concepts.

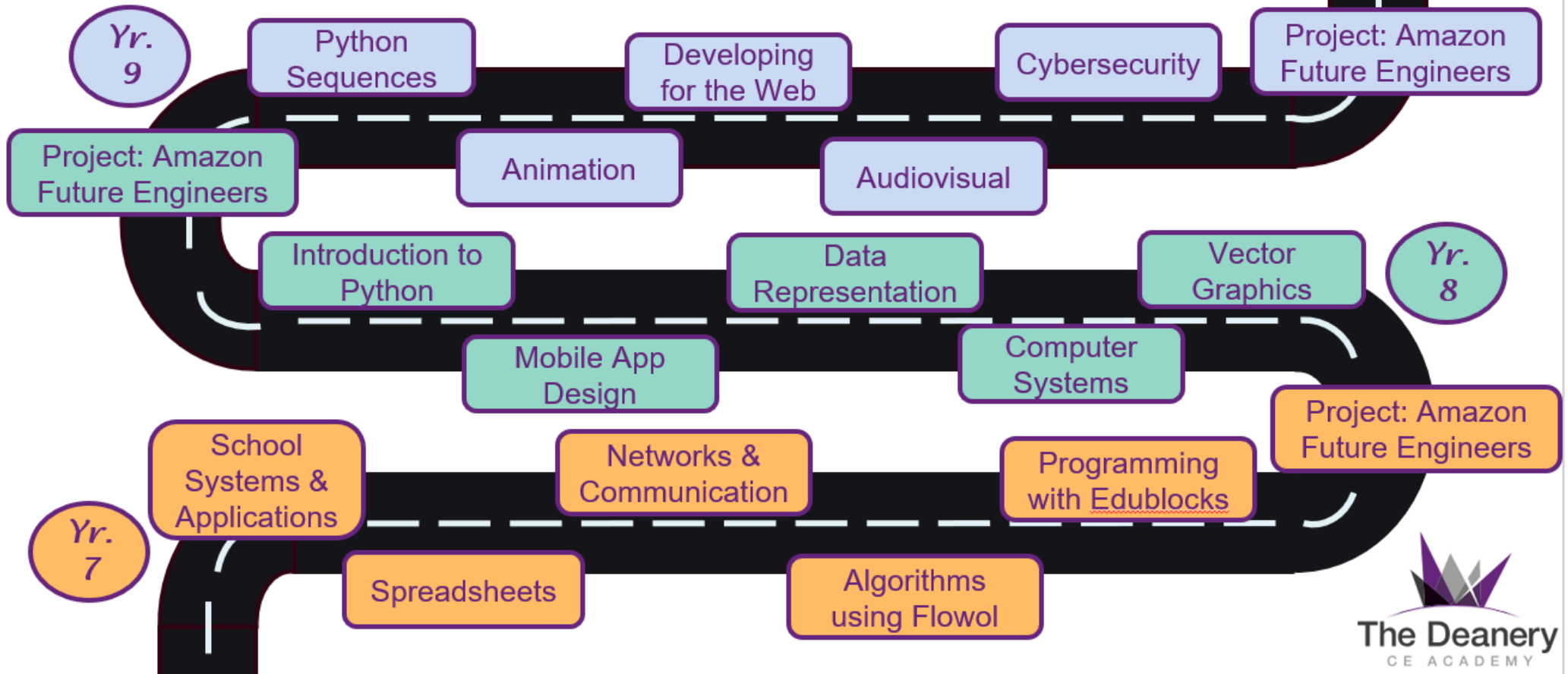
Students are introduced to a wide range of computing topics, providing a strong foundation and insight into what the Computer Science GCSE entails. Beyond the core curriculum, students have opportunities to participate in trips and competitions, further enriching their skills and enthusiasm for computing.

#### **Why is studying Computing important?**

Studying Computer Science is crucial in today's digital world, equipping students with essential skills for future success. It fosters problem-solving and logical thinking by teaching computational methods to break down complex issues. With technology shaping industries like software development, cybersecurity, and game design, Computer Science prepares students for diverse career paths. It also develops digital literacy, ensuring students understand data usage, online safety, and ethical computing. Beyond coding, it nurtures creativity, allowing students to design apps, build games, and explore AI. Computer Science connects with subjects like maths, science, and business, enhancing cross-curricular learning. It also promotes cybersecurity awareness, teaching encryption and data protection. Additionally, programming instils resilience, encouraging students to embrace challenges. As technology evolves, a strong foundation in Computer Science ensures students become creators, not just consumers, fostering innovation and reducing career inequalities. Ultimately, it's a vital 21st-century skill shaping future opportunities.

# KS3 Computing - Years 7 to 9

KS4



## Year 7

Term	Unit of Work	Knowledge and Skills	Assessment
1	Introducing school applications	<p>Students are introduced to applications that will be used throughout their school studies: - Arbor, Email, Network drives.</p> <p>Students will learn basic organisational skills, such as creating new folders and saving documents correctly into the correct locations</p> <p>Students will investigate how to research, look at information bias, how technology is used in the modern world.</p> <p><b>Skills:</b> digital literacy skills, safe online behaviour, effective use of school systems, organising and managing digital workspaces independently.</p> <p><b>British Values:</b> Responsible and respectful use of technology, tolerance, mutual respect, and individual liberty when communicating and collaborating online.</p> <p><b>Opportunities for spirituality:</b> Reflecting on how technology influences their lives and the wider world, considering its impact on personal identity, global communities, and ethical decision-making.</p>	<p>Homework to use Arbor, upload a word document then submit.</p> <p>End of Module Assessment</p>
2	Modelling data using spreadsheets	<p>Students are introduced to the core features of spreadsheet software, including entering data, using basic formulas, formatting cells, and organising information into tables and charts.</p> <p>Students will learn how to structure and manage data effectively, such as setting up clear headings, using consistent formats, and saving spreadsheets in logical locations.</p> <p>Students will explore how modelling data supports decision-making, investigating how spreadsheets can be used to identify patterns, compare scenarios, and analyse real-world information.</p> <p><b>Skills:</b> Ddata-handling and analytical skills, using formulas, creating charts, modelling scenarios, and interpreting results to draw meaningful conclusions.</p> <p><b>British Values:</b> Be responsible with shared data, respect, accuracy, and integrity when handling information, understanding fairness, transparency, and informed decision-making in digital contexts.</p>	<p>Workbook tasks &amp; questions</p> <p>End of Module Assessment</p>

		<p><b>Opportunities for spirituality:</b> Reflect on how data influences understanding of the world, consider ethical implications of data use, how information shapes perspectives, and the role of technology in making sense of complex issues.</p>	
3	Networks	<p>Students are introduced to the concept of computer networks, understanding what a network is and why it is used to connect devices for communication and data sharing.</p> <p>Students will learn about different network topologies, such as star, bus, and ring, exploring how each layout affects reliability, performance, and scalability.</p> <p>Students will investigate common network hardware and protocols, including routers, switches, servers, Ethernet, and Wi-Fi, as well as how these components and rules enable devices to communicate safely and effectively.</p> <p>Students will examine the advantages of networks, such as resource sharing, centralised management, improved communication, and collaboration across devices and users.</p> <p><b>Skills:</b> Students develop foundational knowledge of how digital systems communicate, including identifying hardware, interpreting diagrams, understanding protocols, and explaining how network structures impact performance and reliability.</p> <p><b>British Values:</b> Students learn the importance of responsible behaviour when using shared networks, recognising the need for secure, respectful communication and the role of rules (protocols) in ensuring fairness, safety, and equality across users.</p> <p><b>Opportunities for spirituality:</b> Students reflect on how being connected shapes modern life, considering how networks enable global collaboration, build communities, and influence how individuals interact, communicate, and understand the wider world.</p>	<p>Workbook tasks &amp; questions</p> <p>End of Module Assessment</p>
4	Problem Solving using algorithms	<p><b>Students are introduced to the concept of algorithms and problem-solving</b>, learning how to break down tasks into clear, logical steps that a computer can follow.</p> <p><b>Students will learn to use Flowol to create flowcharts</b>, understanding how symbols, sequences, decisions, and loops are used to model solutions to real-world problems.</p> <p><b>Students will investigate how algorithms control systems</b>, exploring how Flowol mimics automated processes and how instructions must be precise, efficient, and repeatable to achieve accurate outcomes.</p>	<p>Workbook tasks &amp; questions</p> <p>End of Module Assessment</p>

		<p><b>Skills:</b> Students develop computational thinking skills, including decomposition, pattern recognition, logical sequencing, and debugging. They gain confidence in creating and testing algorithms using flowcharting software to solve structured problems.</p> <p><b>British Values:</b> Students learn to apply rules and logical structures when creating algorithms, recognising the importance of fairness, consistency, and accuracy. They also develop respect for shared digital environments by testing responsibly and collaborating thoughtfully.</p> <p><b>Opportunities for spirituality:</b> Students reflect on how algorithms influence everyday life, considering the role of automated decision-making, the impact of technology on human choices, and how problem-solving encourages creativity, curiosity, and personal growth.</p>	
5	Programming essentials using Edublocks	<p>Students are introduced to the fundamentals of programming, learning how to construct simple programs using block-based code within the EduBlocks environment.</p> <p>Students will learn key programming concepts, including sequencing, variables, inputs/outputs, selection, and repetition, gaining confidence by building and modifying code.</p> <p>Students will explore how coding solves real-world problems, experimenting with creating small interactive programs and understanding how block-based programming links to written Python syntax.</p> <p><b>Skills:</b> Computational thinking and programming skills, including sequencing instructions, debugging code, using basic programming constructs, and understanding how logical thinking translates into functional programs.</p> <p><b>British Values:</b> Students learn to work responsibly within shared digital environments, showing respect when collaborating, valuing others' ideas, and recognising the importance of fairness, accuracy, and following rules when creating and testing programs.</p> <p><b>Opportunities for spirituality:</b> Students reflect on the creative nature of programming, considering how problem-solving, experimentation, and designing digital solutions encourage curiosity, personal expression, and a deeper understanding of how technology shapes human experience.</p>	<p>Workbook tasks &amp; questions</p> <p>End of Module Assessment</p>
6	Solve for tomorrow	<p>Students are introduced to the <i>Solve for Tomorrow</i> competition, learning about its focus on innovation, creativity, and using technology to solve real-world community problems.</p> <p>Students will learn how to develop an idea from concept to prototype, exploring design thinking, researching user needs, and planning solutions that address real issues faced by</p>	<p>Completion of competition tasks</p> <p>Creation of idea</p>

		<p>people in society.</p> <p>Students will investigate how technology, teamwork, and problem-solving combine, examining examples of past competition entries and understanding how digital tools can support social, environmental, and community-focused innovation.</p> <p><b>Skills:</b> Students develop critical thinking, creativity, teamwork, and project-planning skills. They learn how to research effectively, generate innovative ideas, communicate their solutions clearly, and create early prototypes that demonstrate their concept.</p> <p><b>British Values:</b> Students learn to consider fairness, inclusivity, and respect when designing solutions for communities. They explore how responsible technology use supports equality, individual liberty, and positive contributions to society.</p> <p><b>Opportunities for spirituality:</b> Students reflect on the wider purpose of innovation, considering how their ideas can positively impact others. They explore empathy, social responsibility, and the ethical implications of designing technology aimed at improving people’s lives.</p>	
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## Year 8

Term	Unit of Work	Knowledge and Skills	Assessment
1	Media – Vector graphics	<p>Students are introduced to the concept of vector graphics, learning how digital images can be created using shapes, lines, and paths rather than pixels.</p> <p>Students will learn key vector-editing techniques, such as layering, grouping, manipulating nodes, and applying colours and gradients to design clean, scalable artwork.</p> <p>Students will explore how vector graphics are used in the real world, including logos, icons, posters, and digital illustrations, and will apply these ideas to create their own media products.</p> <p><b>Skills:</b> Students develop graphic design and digital creativity skills, including precision editing, effective use of design tools, understanding composition, and producing professional-looking vector artwork that can be scaled without losing quality.</p>	<p>Workbook tasks &amp; questions</p> <p>End of Module Assessment</p>

		<p><b>British Values:</b> Students learn to work respectfully and responsibly when creating media, recognising the importance of originality, copyright awareness, and valuing diverse creative perspectives. Collaboration encourages mutual respect and thoughtful communication.</p> <p><b>Opportunities for spirituality:</b> Students reflect on personal expression through digital art, exploring how creativity, design choices, and visual communication can convey ideas, emotions, and identity while appreciating the role of media in shaping how we see the world.</p>	
2	Layers of a computer system.	<p>Students are introduced to the layers of a computer system, learning how hardware, operating systems, applications, and the user interface work together to allow computers to function. Students will learn how each layer depends on the others, exploring how instructions move from software to hardware, how the operating system manages resources, and how users interact with applications.</p> <p>Students will investigate real-world examples of system layers, examining how different devices (such as laptops, phones, and game consoles) use similar layered structures to run programs efficiently and securely.</p> <p><b>Skills:</b> Students develop a foundational understanding of computer architecture, including identifying components of each layer, explaining how they interact, and applying logical reasoning to understand how problems occur within or between layers.</p> <p><b>British Values:</b> Students learn to use technology responsibly and safely, appreciating how secure system layers protect users and uphold fairness, privacy, and individual liberty. They also develop respect for digital norms and best practices when interacting with computer systems.</p> <p><b>Opportunities for spirituality:</b> Students reflect on the complexity and design of modern technology, considering how interconnected systems support creativity, communication, and global connection, and how human innovation shapes the digital world.</p>	<p>Workbook tasks &amp; questions</p> <p>End of Module Assessment</p>
3	Data representation	<p>Students are introduced to how data is represented in computers, learning that all digital information is ultimately stored using binary (0s and 1s).</p> <p>Students will learn how to convert between binary and denary, practising methods for translating numbers into the binary system and back again to understand how computers</p>	<p>Workbook tasks &amp; questions</p> <p>End of Module Assessment</p>

		<p>process numerical data.</p> <p>Students will explore binary addition and character sets, developing an understanding of how computers perform simple arithmetic and how text is encoded using standards such as ASCII and Unicode.</p> <p><b>Skills:</b> Students develop numerical and logical reasoning skills, including converting number bases, performing binary calculations, and interpreting how characters and symbols are stored digitally. They gain confidence in explaining how data is represented within a computer system.</p> <p><b>British Values:</b> Students learn the importance of accuracy, fairness, and integrity when working with digital information. They develop respect for global standards like Unicode that promote inclusion, equality, and consistency in communication across cultures and languages.</p> <p><b>Opportunities for spirituality:</b> Students reflect on the elegance and universality of binary systems, considering how simple patterns underpin complex digital experiences. They explore how data representation supports global communication and shapes how people connect and share ideas.</p>	
4	Mobile app development	<p>Students are introduced to the fundamentals of mobile app development, learning how apps are designed, structured, and used on modern smartphones and tablets.</p> <p>Students will learn how to create simple mobile apps, exploring key concepts such as user interface design, event-driven programming, and creating interactive features that respond to user input.</p> <p>Students will investigate how apps solve real-world problems, looking at examples of effective app design, considering user needs, and evaluating how mobile technology supports everyday tasks and communication.</p> <p><b>Skills:</b> Students develop creativity, problem-solving, and design skills, including planning app layouts, creating intuitive user interfaces, using basic programming constructs, and testing their applications to identify and fix issues.</p> <p><b>British Values:</b> Students learn to design technology responsibly, considering accessibility, inclusivity, and respectful digital behaviour. They explore how mobile apps can promote equality, individual liberty, and positive, ethical use of technology in society.</p>	<p>Workbook tasks &amp; questions</p> <p>End of Module Assessment</p>

		<p><b>Opportunities for spirituality:</b> Students reflect on how mobile technology shapes human experiences, exploring how app design can support personal wellbeing, community connection, and creative expression. They consider the impact of digital innovation on their lives and the wider world.</p>	
5	Introduction to Python	<p>Students are introduced to the Python programming language, learning what Python is used for and why it is one of the most popular languages in the world.</p> <p>Students will learn fundamental programming concepts, including variables, data types, input and output, sequencing, selection, and simple iteration. They will practise writing and running Python code in a safe, structured environment.</p> <p>Students will explore how Python can be used to solve problems, experimenting with writing small programs, debugging errors, and understanding how text-based programming connects to real-world applications.</p> <p><b>Skills:</b> Students develop core computational thinking and coding skills, such as structuring programs, writing clear and logical code, debugging, and applying programming constructs to solve simple tasks. They develop confidence transitioning from block-based to text-based programming.</p> <p><b>British Values:</b> Students learn to act responsibly when creating and sharing code, respecting digital rules and demonstrating fairness, accuracy, and collaboration. They recognise how programming can support equality, accessibility, and positive use of technology.</p> <p><b>Opportunities for spirituality:</b> Students reflect on the creative and logical nature of programming, considering how writing code encourages problem-solving, innovation, and personal expression. They explore the role of programming in shaping modern life and global communication.</p>	<p>Workbook tasks &amp; questions</p> <p>End of Module Assessment</p>
6	Solve for tomorrow	<p>Students are introduced to the <i>Solve for Tomorrow</i> competition, learning about its focus on innovation, creativity, and using technology to solve real-world community problems.</p> <p>Students will learn how to develop an idea from concept to prototype, exploring design thinking, researching user needs, and planning solutions that address real issues faced by people in society.</p> <p>Students will investigate how technology, teamwork, and problem-solving combine, examining examples of past competition entries and understanding how digital tools can support social, environmental, and community-focused innovation.</p>	<p>Completion of competition tasks</p> <p>Creation of idea</p>

		<p><b>Skills:</b> Students develop critical thinking, creativity, teamwork, and project-planning skills. They learn how to research effectively, generate innovative ideas, communicate their solutions clearly, and create early prototypes that demonstrate their concept.</p> <p><b>British Values:</b> Students learn to consider fairness, inclusivity, and respect when designing solutions for communities. They explore how responsible technology use supports equality, individual liberty, and positive contributions to society.</p> <p><b>Opportunities for spirituality:</b> Students reflect on the wider purpose of innovation, considering how their ideas can positively impact others. They explore empathy, social responsibility, and the ethical implications of designing technology aimed at improving people’s lives.</p>	
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## Year 9

Term	Unit of Work	Knowledge and Skills	Assessment
1	Python sequences	<p>Students are introduced to Python sequences, focusing on lists and strings as core data structures used to store and organise multiple pieces of data.</p> <p>Students will learn how to create and manipulate lists, including adding, removing, updating elements, indexing and slicing, and understanding how lists differ from other sequence types.</p> <p>Students will explore iteration, learning how for and while loops can be used to process sequences efficiently, automate repeated tasks, and solve real programming problems that involve handling sets of data.</p> <p><b>Skills:</b> Students develop confidence in working with lists, strings, and other sequence types. They refine their ability to loop through data, apply indexing and slicing, debug iterative code, and design programs that rely on structured data and repeated actions.</p> <p><b>British Values:</b> Students learn to use programming responsibly, demonstrating accuracy, fairness, and respect when creating programs that work with data. Collaboration during coding tasks supports mutual respect and encourages inclusive problem-solving.</p> <p><b>Opportunities for spirituality:</b> Students reflect on how patterns and structure in code help make sense of complex information. They explore the creativity involved in designing iterative solutions and consider the broader impact of software on communication, organisation, and how people interact with the digital world.</p>	<p>Workbook tasks &amp; questions</p> <p>End of Module Assessment</p>

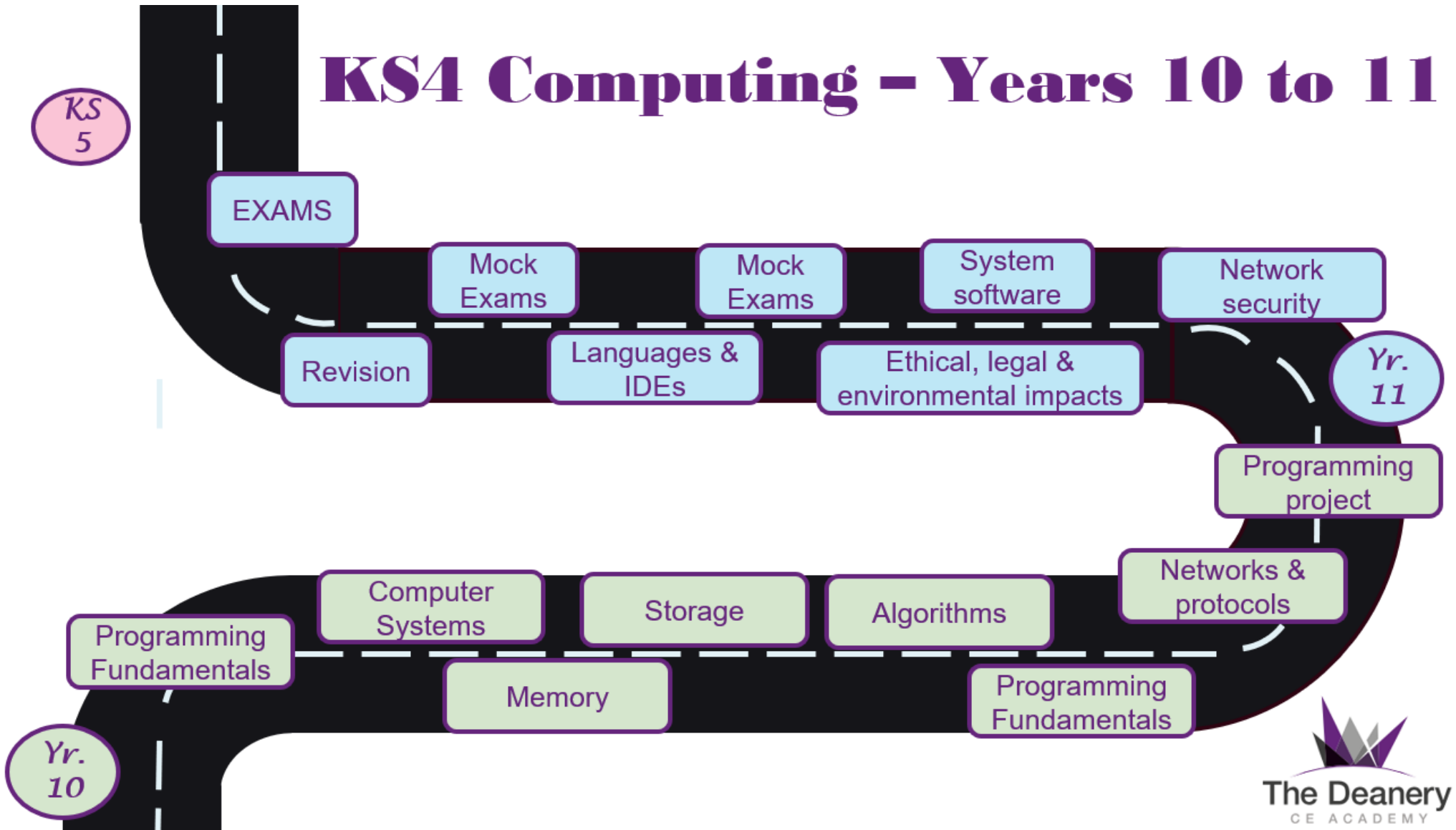
2	Media - Animations	<p>Students are introduced to the fundamentals of digital animation, learning how Blender can be used to create 3D models, scenes, and motion.</p> <p>Students will learn key animation techniques, including manipulating objects, using keyframes, adjusting timelines, applying basic transformations, and creating smooth, realistic movement within a 3D environment.</p> <p>Students will explore how animation is used in the real world, examining examples from film, games, advertising, and visual effects, and applying these ideas to design and produce their own short 3D animations.</p> <p><b>Skills:</b> Students develop creative and technical skills in 3D modelling and animation, including object manipulation, keyframing, camera movement, lighting, and rendering. They also improve problem-solving abilities as they troubleshoot issues in their Blender projects.</p> <p><b>British Values:</b> Students learn to work respectfully and collaboratively, offering constructive feedback and valuing diverse artistic ideas. They consider copyright, originality, and responsible use of digital tools when creating media content.</p> <p><b>Opportunities for spirituality:</b> Students reflect on how animation allows them to express ideas, emotions, and narratives visually. They explore creativity, imagination, and the power of visual storytelling, considering how digital media influences how people perceive and understand the world.</p>	<p>Workbook tasks &amp; questions</p> <p>End of Module Assessment</p>
3	Developing for the web	<p>Students are introduced to the fundamentals of web development, learning how websites are structured and how HTML, CSS, and basic design principles work together to create web pages. Students will learn how to build and style simple web pages, exploring core elements such as headings, paragraphs, links, images, colour schemes, layout, and typography, while applying CSS to enhance presentation and usability.</p> <p>Students will investigate how websites function on the internet, understanding how browsers interpret code, how pages are hosted, and the importance of accessibility, responsiveness, and user-centred design.</p> <p><b>Skills:</b> Students develop foundational digital creation skills, including writing HTML, applying CSS styling, organising content effectively, and debugging simple webpage issues. They learn to design user-friendly, accessible pages and develop confidence in creative web technologies.</p>	<p>Workbook tasks &amp; questions</p> <p>End of Module Assessment</p>

		<p><b>British Values:</b> Students learn to create web content responsibly, considering inclusivity, accessibility, copyright, and respectful online communication. They explore how web development promotes equality and supports individual liberty by enabling diverse voices to share information online.</p> <p><b>Opportunities for spirituality:</b> Students reflect on how the web connects people globally, considering its impact on expression, identity, and community. They explore the creative potential of designing for the web and the role digital spaces play in shaping how individuals interact and understand the world.</p>	
4	Audiovisual	<p>Students are introduced to the fundamentals of audiovisual media, learning how sound and images work together to communicate ideas and create digital content.</p> <p>Students will learn key techniques for editing and combining sound and images, including importing assets, trimming clips, layering audio, adjusting volume levels, adding transitions, and applying basic visual effects to enhance meaning.</p> <p>Students will explore how sound and imagery are used in real-world media, examining examples from digital advertising, social media content, short films, and animations, and applying these ideas to produce their own short audiovisual projects using pre-recorded assets.</p> <p><b>Skills:</b> Students develop creative and technical skills in assembling and editing audiovisual content. They learn how to organise digital assets, manage timelines, synchronise sound with visuals, and make design choices that support clear and effective communication.</p> <p><b>British Values:</b> Students learn to use media responsibly and ethically, respecting copyright, selecting content appropriately, and valuing diverse creative perspectives when working collaboratively. They practise respectful communication and teamwork throughout the editing process.</p> <p><b>Opportunities for spirituality:</b> Students reflect on how sound and imagery can express emotions, ideas, and personal viewpoints. They explore the power of media to shape understanding, identity, and connection, considering how creative choices influence how audiences experience the world.</p>	<p>Workbook tasks &amp; questions</p> <p>End of Module Assessment</p>
5	Cybersecurity	<p>Students are introduced to the fundamentals of cybersecurity, learning why protecting personal information, devices, and networks is essential in the modern digital world.</p> <p>Students will learn about common cyber threats, including malware, phishing, brute-force attacks, social engineering, and insecure passwords, and how these threats impact individuals,</p>	<p>Workbook tasks &amp; questions</p> <p>End of Module Assessment</p>

		<p>organisations, and society.</p> <p>Students will explore strategies for staying safe online, such as using strong passwords, recognising suspicious messages, understanding secure websites, and practising responsible digital behaviour.</p> <p><b>Skills:</b> Students develop practical skills in identifying risks, creating secure passwords, spotting phishing attempts, and understanding how to protect their digital identity. They build confidence in applying safe online habits and understanding how cybersecurity safeguards digital systems.</p> <p><b>British Values:</b> Students learn the importance of acting responsibly and respectfully online, understanding how cybersecurity supports individual liberty, privacy, and fairness. They explore how following digital rules and behaving ethically helps create a safe and supportive online community.</p> <p><b>Opportunities for spirituality:</b> Students reflect on the impact of their online actions, considering how trust, responsibility, and integrity shape digital interactions. They explore how cybersecurity helps protect people, communities, and their sense of safety in an increasingly connected world.</p>	
6	Solve for tomorrow	<p>Students are introduced to the <i>Solve for Tomorrow</i> competition, learning about its focus on innovation, creativity, and using technology to solve real-world community problems.</p> <p>Students will learn how to develop an idea from concept to prototype, exploring design thinking, researching user needs, and planning solutions that address real issues faced by people in society.</p> <p>Students will investigate how technology, teamwork, and problem-solving combine, examining examples of past competition entries and understanding how digital tools can support social, environmental, and community-focused innovation.</p> <p><b>Skills:</b> Students develop critical thinking, creativity, teamwork, and project-planning skills. They learn how to research effectively, generate innovative ideas, communicate their solutions clearly, and create early prototypes that demonstrate their concept.</p>	<p>Completion of competition tasks</p> <p>Creation of idea</p>

		<p><b>British Values:</b> Students learn to consider fairness, inclusivity, and respect when designing solutions for communities. They explore how responsible technology use supports equality, individual liberty, and positive contributions to society.</p> <p><b>Opportunities for spirituality:</b> Students reflect on the wider purpose of innovation, considering how their ideas can positively impact others. They explore empathy, social responsibility, and the ethical implications of designing technology aimed at improving people's lives.</p>	
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# KS4 Computing - Years 10 to 11



## Year 10: GCSE Specification AQA

Term	Unit of Work	Knowledge and Skills	Assessment
1	Programming fundamentals	<p>Students are introduced to fundamental programming concepts, including variables, data types, inputs/outputs, sequencing, selection, and iteration.</p> <p>Students will learn how to write, trace and debug code, building programs that use core constructs to solve structured problems.</p> <p>Students will explore how computational thinking supports programming, applying decomposition, abstraction and logical reasoning to design effective solutions.</p> <p><b>Skills:</b> Students develop confidence in writing structured code, debugging errors, interpreting pseudocode/flowcharts, and applying core programming constructs to real problems.</p> <p><b>British Values:</b> Students learn responsible and respectful coding practices, appreciating fairness, accuracy and integrity when building and sharing programs.</p> <p><b>Opportunities for spirituality:</b> Students reflect on the creativity of programming, exploring how logical thinking and design choices influence the digital world.</p>	<p>Complete coding tasks</p> <p>Past paper questions</p>
2	Computer systems & Memory	<p>Students are introduced to the architecture of computer systems, including the CPU, registers, and the fetch-decode-execute cycle.</p> <p>Students will learn how memory works, exploring RAM, ROM, cache, virtual memory and how different types of memory support system performance.</p> <p>Students will investigate how hardware components interact, understanding how systems execute instructions and store data.</p> <p><b>Skills:</b> Students build strong theoretical understanding of system architecture, data processing and memory hierarchy.</p> <p><b>British Values:</b> Students learn respect for digital rules and standards that ensure fairness, safety and consistency across devices.</p> <p><b>Opportunities for spirituality:</b> Students reflect on the complexity and innovation behind computer systems and how technology shapes modern life.</p>	<p>Homework: Tassomai</p> <p>Past paper questions</p> <p>End of topic assessments</p>

3	Storage	<p>Students are introduced to how data is stored, learning about different storage technologies including magnetic, solid-state and optical storage, and understanding the characteristics of each.</p> <p>Students will learn how data is represented digitally, exploring binary, denary conversions, binary addition, characters sets (ASCII/Unicode), and how numbers, text, images and sound are encoded.</p> <p>Students will investigate methods of data compression, including lossy and lossless techniques, understanding why compression is needed and how it affects file size, quality and storage efficiency.</p> <p><b>Skills:</b> Students develop analytical and technical skills by comparing storage devices, performing binary conversions, understanding encoding systems, and evaluating the suitability and effectiveness of different compression methods.</p> <p><b>British Values:</b> Students learn responsible behaviour when handling and storing data, considering privacy, accuracy and the ethical implications of data management. They explore how fair and secure data practices support equality and protect individual rights.</p> <p><b>Opportunities for spirituality:</b> Students reflect on how data underpins all digital experiences, considering the elegance of binary systems, the importance of information, and how digital media connects people, preserves knowledge and shapes communication in the modern world.</p>	<p>Homework: Tassomai</p> <p>Past paper questions</p> <p>End of topic assessments</p>
4	Boolean Logic & Algorithms	<p>Students are introduced to Boolean logic, learning how logic gates and truth tables underpin decision-making in digital circuits.</p> <p>Students will learn algorithmic principles, including pseudocode, flowcharts, decomposition and abstraction.</p> <p>Students will explore how algorithms are used to solve problems, analysing efficiency, correctness and structure.</p> <p><b>Skills:</b> Students gain strong logical reasoning abilities and confidence creating, interpreting and evaluating algorithms.</p> <p><b>British Values:</b> Students recognise the fairness and consistency of rule-based systems, understanding how logical structures support equality.</p>	<p>Homework: Tassomai</p> <p>Past paper questions</p> <p>End of topic assessments</p>

		<p><b>Opportunities for spirituality:</b> Students reflect on how patterns and logic help explain complex systems and support problem-solving.</p>	
5	Advanced programming concepts	<p>Students are introduced to more advanced data structures, including lists, arrays and 2D arrays, learning how to store, organise and manipulate larger sets of data efficiently.</p> <p>Students will learn how to work with external files, gaining experience in reading from and writing to text files to handle persistent data in their programs.</p> <p>Students will undertake a structured programming project, applying design techniques (such as flowcharts, pseudocode and structure charts), implementing their solution in code, and performing thorough testing and evaluation.</p> <p><b>Skills:</b> Students develop strong problem-solving and programming skills, including handling complex data structures, managing external data, planning full solutions, debugging advanced code, and creating programs that are robust, maintainable and efficient.</p> <p><b>British Values:</b> Students learn to code responsibly and ethically, respecting data privacy, accuracy and integrity when working with stored information. Collaboration and peer review promote fairness, respect and constructive communication.</p> <p><b>Opportunities for spirituality:</b> Students reflect on the creativity and complexity of building complete software solutions, considering how thoughtful design and careful testing contribute to technology that supports people, communities and positive digital experiences.</p>	<p>Past paper questions</p> <p>Completion of programming project</p>
6	EoY Mock exam Networks and connections and	<p>Students are introduced to the fundamentals of computer networks, learning the purpose of networks and the differences between LANs, WANs and other network types.</p> <p>Students will learn about network hardware, including routers, switches, WAPs, NICs and transmission media such as copper, fibre-optic and wireless connections.</p> <p>Students will investigate how data travels across a network, exploring bandwidth, latency, wired vs wireless performance, and factors that affect network reliability and speed.</p> <p><b>Skills:</b> Students develop a strong understanding of how devices communicate, how different network components operate and how connection types impact performance. They learn to interpret network diagrams and explain how data flows between devices.</p>	<p>Homework: Tassomai</p> <p>Past paper questions</p> <p>End of topic assessments</p> <p>EoY10 Mock exam</p>

		<p><b>British Values:</b> Students learn the importance of responsible network use, understanding how digital communication relies on fairness, shared systems and respecting others in connected environments.</p> <p><b>Opportunities for spirituality:</b> Students reflect on how connectivity supports global communication and community, considering how networks shape relationships, collaboration and access to information.</p>	
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## Year 11

Term	Unit of Work	Knowledge and Skills	Assessment
1	Protocols and Network security	<p>Students are introduced to key networking protocols, including TCP/IP, HTTP/HTTPS, FTP, SMTP, IMAP and Ethernet, learning how rules enable devices to communicate efficiently and accurately.</p> <p>Students will learn about network addressing and data transfer, exploring MAC addresses, IP addressing, packet switching and how structured communication prevents errors and ensures reliable delivery.</p> <p>Students will investigate network security threats, such as malware, phishing, denial-of-service attacks and brute-force attempts, and learn how firewalls, encryption, user access levels and secure protocols help protect systems from attack.</p> <p><b>Skills:</b> Students develop the ability to explain how protocols ensure stable communication, analyse cyber threats and describe how security measures protect networks and users from harm.</p> <p><b>British Values:</b> Students learn the importance of digital responsibility, privacy and security, recognising how following rules and acting ethically online supports fairness, individual liberty and protection from harm.</p> <p><b>Opportunities for spirituality:</b> Students reflect on the importance of trust and safety in digital communities, considering how secure communication helps people feel protected, valued and connected in an increasingly online world.</p>	<p>Homework: Tassomai</p> <p>Past paper questions</p> <p>End of topic assessments</p>

2	Mocks & System software & Impacts of technology	<p>Students are introduced to system software, learning the roles of operating systems, utility programs and file management.</p> <p>Students will learn how technology impacts individuals and society, exploring social, ethical, legal and environmental considerations.</p> <p>Students will investigate real-world examples of digital change, such as automation, AI, data privacy and digital wellbeing.</p> <p><b>Skills:</b> Students develop analytical skills when evaluating technology's impact and understanding core system functions.</p> <p><b>British Values:</b> Students explore issues of equality, privacy, rights and responsible use of technology in modern society.</p> <p><b>Opportunities for spirituality:</b> Students reflect on how technology influences identity, wellbeing, culture and global interaction.</p>	<p>Homework: Tassomai</p> <p>Past paper questions</p> <p>End of topic assessments</p> <p>Mock exam</p>
3	Producing robust programs & Programming languages & IDEs	<p>Students are introduced to strategies for writing robust code, including defensive design, validation, testing and debugging.</p> <p>Students will learn about different programming languages, comparing high-level and low-level languages and understanding translators such as compilers and interpreters.</p> <p>Students will explore how IDEs support development, using tools such as debuggers, error messages, code editors and testing environments.</p> <p><b>Skills:</b> Students develop strong problem-solving skills, writing reliable, maintainable code and using IDE tools effectively.</p> <p><b>British Values:</b> Students learn the importance of accuracy, diligence and integrity when developing programs used by others.</p> <p><b>Opportunities for spirituality:</b> Students reflect on how careful design and testing contribute to creating technology that helps people and communities.</p>	<p>Homework: Tassomai</p> <p>Past paper questions</p> <p>End of topic assessments</p>
4 & 5	Mocks & Revision Exams (Term 5)	<p>Students are introduced to effective revision strategies, learning how to review, consolidate and strengthen their understanding across all GCSE Computer Science topics.</p> <p>Students will revisit core theory content, including programming fundamentals, systems architecture, memory and storage, data representation, networks, cybersecurity, ethics, and software. They will complete targeted activities to address knowledge gaps and misconceptions.</p>	<p>Homework: Tassomai</p> <p>Quizzes</p> <p>Past Papers</p> <p>Mock exam</p>

		<p>Students will practise applying their learning to exam-style questions, developing confidence in explaining, analysing and evaluating technical concepts while improving their ability to write clear, structured and accurate answers.</p> <p><b>Skills:</b> Students develop strong independent study habits, improved exam technique, and the ability to recall and apply knowledge under timed conditions. They build confidence in problem-solving, interpreting questions, planning responses, and evaluating sample answers.</p> <p><b>British Values:</b> Students learn to take responsibility for their learning, showing resilience, self-discipline and respect for themselves and their peers during collaborative revision. They explore the ethical and societal issues surrounding technology as part of the exam content, considering fairness, equality, privacy and responsible digital engagement.</p> <p><b>Opportunities for spirituality:</b> Students reflect on their personal growth throughout the course, considering how perseverance, curiosity and reflection contribute to their success. They explore the impact of technology on identity, community and the wider world as they revise ethical and social topics.</p>	
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