Subject: KS3 Computer Science

The KS3 curriculum at Cardinal Wiseman has been designed to ensure learners have sufficient knowledge to stay safe online and use computers safely in life. The KS3 curriculum also provides a focus on developing resilient learners who know how computer systems are built, the language of computer processors and how networks are setup / how the internet works. The will learn the basic of computer programming and be able to recover from mistakes and effectively solve problems. The topics at KS3 give a basis of knowledge, skills and understanding to allow students to progress onto either IT or Computer Science at KS4 and will provide exposure to those subjects so that students can make an informed decision on their GCSE choices.

By the end of KS3 a Cardinal Wiseman School Computer Scientist / Media Student will:

- Be aware of the opportunities and limitations of living in a digital world
- Understand the core principles of information and computation, how digital systems work and how to put this knowledge to use through programming or product creation.
- Be equipped to use technology to create programs, systems and a range of content.
- Become digitally literate – able to use computers to express themselves and develop their ideas.

	Autumn	Spring	Summer
KS3	Students first complete a unit on digital literacy which includes understanding a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy Students will understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems They then go on to exploring how instructions are stored and executed within a computer system; understand how data of various types can be represented and manipulated digitally, in the form of binary digits	Students first explore how hardware and software components make up computer systems, and how they communicate with one another and with other systems Students undertake a creative project making a website that involves selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability.	Students will show understanding understanding of several key algorithms that reflect computational thinking. Students will be able to use 2 programming languages to design, use and evaluate programming solutions that model the state and behaviour of real-world problems and physical systems They will also apply their logic when creating simple functions and formulae in spreadsheets

Subject: GCSE Computer Science

Rationale: The students follow the OCR Computer Science GCSE programme which covers three components – theory, programming and practical application. Half-termly assessments are set. Progression is mapped and allows for effective differentiation, marking and feedback and stretch for more able pupils. Pupils have access to an online computer science, information technology and digital literacy programme, which supports their learning in the lesson and at home. Regular 'long answer' questions support the literacy and aim to support and stretch all students.

Throughout both key stages the students are exposed the importance of communicating safely and respectfully online, and the need for keeping personal information private; teaching them to know what do when concerned about content or being contacted and to become responsible users of technologies and online services.

	Autumn	Spring	Summer
Year 10	• 1.1 Systems architecture • 1.2 Memory and storage • 1.3 Computer networks, connections and protocols	• 1.3 Computer networks, connections and Protocols • 1.4 Network security • 1.5 Systems software Practical Programming skills	• 1.6 Ethical, legal, cultural and environmental impacts of digital technology • 2.1 Algorithms • 2.2 Programming fundamentals Practical Programming skills
Year 11	• 2.4 Boolean logic • 2.3 Producing robust programs Practical Programming skills	2.5 Programming languages and Integrated Development Environments Exam Revision for both papers	Exam Revision for both papers Complete final exams

Subject: KS4 Cambridge National IT (L2 Vocational)

Rationale: This qualification will teach the learner what different technologies could be used, why they should use them and how to make best use of them, to gather, store, manipulate and present data; this is known as data management. They will learn about tools and techniques for use in different digital hardware and software technologies, and how these can be integrated to create digital solutions to manage and communicate data and information. They will also be taught what data and information are and the legal, ethical and moral considerations when using technology to gather, store and present data and information, and how to mitigate the risks of cyber-attacks. Through this qualification they will be able to select and use the most appropriate technology safely and effectively, to complete a data management task, such as a cable TV provider monitoring customers' viewing to make recommendations for additional packages in the customer's subscription.
The course is designed to give students a real understanding of their digital environment, develop key skills, and prepare them for their future use of IT in their chosen careers across a wide range of job roles.
Students will study two units across the two years. Each Unit Assessment is graded at Pass, Merit, Distinction and Distinction* at Level 1 and Level 2. They must complete both units of assessment to achieve the qualification

	Autumn	Spring	Summer
Year 10	**Theory** **Learning Outcome 1:** Understand the tools and techniques that can be used to initiate and plan solutions **Learning Outcome 3:** Understand how data and information can be collected, stored and Used **Practical** **Learning Outcome 2:** To be able to initiate and plan a solution to meet an identified need - Project planning skills **Learning Outcome 7:** To be able to select and present information in the development of the solution to meet an identified need Word Skills	**Theory** **Learning Outcome 4:** Understand the factors to be considered when collecting and processing data and storing data/information **Learning Outcome 6:** Understand the different methods of processing data and presenting information **Practical** **Learning Outcome 5:** To be able to import and manipulate data to develop a solution to meet an identified need Spreadsheet skills Database skills	Exam Revision Students complete R012 Exam Students Start R013 Controlled PRACTICE Assessment 1a: Initiation and planning: Use of IT tools and techniques 2a Initiating and planning - Analysis of brief and planning approach 1b Execution 1 - To import and manipulate data
Year 11	1b Execution 1 - To import and manipulate data 2b Execution 1 – Importing and manipulating data 1c Execution 2 - To select and present	Start actual Controlled Assessment - R013 1a: Initiation and planning: Use of IT tools and techniques 2a Initiating and planning - Analysis of brief and planning approach	2c Execution 2 - Selecting and presenting information **Learning Outcome 8:** To be able to iteratively review and evaluate the development of the

Subject: Level 3 IT (Vocational IT)

Rationale: Students can study Cambridge Technical IT level 3 without taking a GCSE in the subject, although the majority students will have potentially have studied IT or Computer Science at GCSE.
This qualification aims to develop pupils' knowledge, understanding and skills of the essentials of IT and Global information. Pupils' will gain an insight into the IT sector as they investigate the pace of technological change, IT infrastructure on a global scale, and the importance of legal and security considerations.

Students will sit two exams for the externally assessed units and complete 3 units of coursework over the two year course. During year 12 pupils will complete the two exam based units, Unit 1 Fundamentals of IT and Unit 2 Global Information.

	Autumn	Spring	Summer
Year 12	**Unit 1 Fundamentals of IT** LO1 - LO5 - Complete theory for whole unit in preparation for the exam	**UNIT 1 EXAM** Unit 2 Global Information 1. Where information is held globally and how it is transmitted 2. Understand the styles, classification and the management of global information 3. Use of global information and the benefits to individuals and orgs.	4. Legal and regulatory framework 5. Process flow of information **UNIT 2 EXAM** Start coursework - **Unit 6 App Design**
Year 13	Continue with **Unit 6 App Design** Complete by half term Start next coursework: **Unit 13 Social media and Marketing**	Complete Unit 13 Social Media and Marketing Start final coursework **Unit 21 - Website prototyping - C/W**	Completion of final coursework Moderation to take place