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Computing Curriculum 5 YEAR PLAN – 2022/23

Year 7						
Year 7 students are taught Computing one term per year through enrichment lessons. We aim to develop digital literacy skills in our students by ensuring they understand the basics of Internet safety such as creating strong passwords, understanding, and using privacy settings, and knowing what to share or not on social media. They understand the perils of cyberbullying and seek to stop current bullies and prevent others from cyberbullying. Students are taught how to create PowerPoint presentations apply different skills to their work e.g., slide transitions, formatting skills, hyperlinks, and master slides. Students develop skills using Word and Publisher. E.g., page design, shapes, layout, margins, tables, header, and footer. Students also learn about internet safety / reliability and validity, copyright, and cyber abuse.						
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
7	Using Technology Safely Unit 1.1 - Passwords and logging on Unit 1.2 - Getting started with Horizons Unit 1.3 - Respectful Communication Online Unit 1.4 - What is cyberbullying? Unit 1.5 - Presenting to an Audience	**Information technology** Unit 2.1- Word Processing Unit 2.2 - Licencing and copyright Unit 2.3 – Credibility Unit 2.4- Email and online images Unit 2.5 - Putting content online	Data Modelling (Spreadsheets) Unit 3.1 Primary and secondary data Unit 3.2– Data collection Unit 3.3– Spreadsheet formula	Using Technology Safely Unit 1.1 - Passwords and logging on Unit 1.2 - Getting started with Horizons Unit 1.3 - Respectful Communication Online Unit 1.4 - What is cyberbullying? Unit 1.5 - Presenting to an Audience	**Information technology** Unit 2.1- Word Processing Unit 2.2 - Licencing and copyright Unit 2.3 – Credibility Unit 2.4- Email and online images Unit 2.5 - Putting content online	Data Modelling (Spreadsheets) Unit 3.1 Primary and secondary data Unit 3.2– Data collection Unit 3.3– Spreadsheet formula

Year 8						
Year 8 students are taught Computing one term per year through enrichment lessons. Students study the binary and hexadecimal number system, why it is used by computers and how to convert between this and our denary number system. Once students understand binary and hexadecimal numbers, they look at the logic gates AND, OR and NOT and their respective truth tables. Students use another common software package MS Excel to work with data. The purpose of this unit is for students to understand how data can be collected, analyzed, and used.						
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
8	Number bases and Boolean Logic Unit 1.1 – Binary number system Unit 1.2 – Hexadecimal number system Unit 1.3 – Boolean Logic	Data Modelling (Spreadsheets) Unit 2.1 – Introduction to spreadsheet Unit 2.2 – Working with data	Binary and Boolean Logic Unit 3.1- Binary numbers Unit 3.2 – Logic gates Unit 3.3 – Logic circuits Unit 3.4 – Truth Tables	Number bases and Boolean Logic Unit 1.1 – Binary number system Unit 1.2 – Hexadecimal number system Unit 1.3 – Boolean Logic	Data Modelling (Spreadsheets) Unit 2.1 – Introduction to spreadsheet Unit 2.2 – Working with data	Binary and Boolean Logic Unit 3.1- Binary numbers Unit 3.2 – Logic gates Unit 3.3 – Logic circuits Unit 3.4 – Truth Tables

Year 9						
Year 9 students are taught Computing one term per year through enrichment lessons. Students understand the structure of programming language (syntax, semantics, variables, data types, statement, sequence, iteration, Selection, functions) and are given the opportunity to write basic program using Python. Students focus on Computer Systems, in particular Systems Architecture, Memory and Storage. Students learn about the purpose of the CPU and factors that can affect its performance. The difference between primary and secondary storage are taught and students explore the need for secondary storage.						
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
9	**Computer Systems** Unit 1.1 - Systems architecture Unit 1.2 - Memory and storage	Binary and Data Representation Unit 2.1 – Binary Numbers Unit 2.2 – Character sets Unit 2.3 – Representing images in Binary Unit 2.4- Lossy and lossless compression	Programming with Python Unit 3.1– Variables Unit 3.2 – Syntax Unit 3.3- Importing modules Unit 3.4- Debugging Unit 3.5– Sequence Unit 3.6- Interation	**Computer Systems** Unit 1.1 - Systems architecture Unit 1.2 - Memory and storage	Binary and Data Representation Unit 2.1 – Binary Numbers Unit 2.2 – Character sets Unit 2.3 – Representing images in Binary Unit 2.4- Lossy and lossless compression	Programming with Python Unit 3.1– Variables Unit 3.2 – Syntax Unit 3.3- Importing modules Unit 3.4- Debugging Unit 3.5– Sequence Unit 3.6- Interation

Year 10						
Computer Science is an option GCSE subject that students can choose in year 10. In the programme, students are given the opportunity to understand and apply the fundamental principles and concepts of Computer Science, including abstraction, decomposition, logic, algorithms, and data representation. Students also analyse problems in computational terms through practical experience of solving problems, including designing, writing, and debugging programs. Students learn to think creatively, innovatively, analytically, logically and critically. Students are taught how to understand the components that make up digital systems, and how they communicate with one another and with other systems, understand the impacts of digital technology to the individual and to wider society and apply mathematical skills relevant to Computer Science. In **Autumn term** students focus on Computer Systems, in particular Systems Architecture, Memory and Storage. Students learn about the purpose of the CPU and factors that can affect its performance. The difference between primary and secondary storage are taught and students explore the need for secondary storage. In **Spring term** students learn about types of network and factors that affect the performance of network. The principles of computational thinking as well as designing, creating and refining algorithms are also covered. In **Summer term** students explore the three basic programming constructs, the use of data types and basic string manipulation.						
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
10	**Computer Systems** Unit 1.1 Systems architecture	**Computer Systems** Unit 1.2 Memory and storage	**Computer Systems** Unit 1.3 Computer networks, connections and protocols	**Computational thinking, algorithms and programming** Unit 2.1 Algorithms	**Computational thinking, algorithms and programming** Unit 2.2 Programming fundamentals	**Computational thinking, algorithms and programming** Unit 2.4 Boolean logic

Year 11						
Year 11 build on the knowledge students garnered in year 10. Students continue to apply the fundamental principles and concepts of Computer Science, including abstraction, decomposition, logic, algorithms, and data representation. Students also analyse problems in computational terms through practical experience of solving problems, including designing, writing, and debugging programs. Students learn to think creatively, innovatively, analytically, logically and critically. Students are taught how to understand the components that make up digital systems, and how they communicate with one another and with other systems, understand the impacts of digital technology to the individual and to wider society and apply mathematical skills relevant to Computer Science. In **Autumn term** students are taught threats to computer systems and networks, identifying and preventing vulnerabilities and the purpose and function of operating systems and utility software. Students also learn about the impacts of digital technology on the wider society and legislation relevant to Computer Science. In **Spring term** students learn to produce robust programs using defensive design and testing. Students also explore characteristics and different levels of programming language and the Integrated Development Environment (IDE). Students are given the opportunity to undertake a programming task or tasks during this term which allow them to develop skills within the following areas when programming; design, write, test and refine.						
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
11	**Computer Systems** Unit 1.4 Network security Unit 1.5 Systems software	**Computer Systems** Unit 1.6 Ethical, legal, cultural and environmental impacts of digital technology	**Computational thinking, algorithms and programming** Unit 2.3 Producing robust programs Unit 2.5 Programming languages and Integrated	Revision	Revision	Revision

			Development Environments			