

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7	Google Drive and Google Docs Students will learn about the products we use here at Orchard Park. They will gain an introduction to Google Classroom, Google Docs and Google Drive in order to efficiently use the products while studying at Orchard Park	Microsoft Word and Excel Students will continue to work on Google products, but will also learn how to format Microsoft Word documents and understand how to use Microsoft Excel and what we use it for.	Scratch Programming Students will begin looking at the features available on scratch and look at the fundamental programming concepts. Students will look at sequence, selection and iteration as well as basic movements.	Scratch Programming Students will build on knowledge in Spring 1 and use inputs and variables in their programs. Students will look at creating a basic program using the skills they have used and the features available in Scratch	The Impact of Technology on Mental Health, Ethics and the Environment Students will look at the impact that technology has had on the world around us. They will start by studying the impact Social Media has had on Mental Health and how ethical considerations must be considered when working with technology	The Impact of Technology on Mental Health, Ethics and the Environment Students will build on the knowledge from Summer 1 and look at the impact Technology has had on society and the Environment. Students will learn both the positive and negative impact technology has had on the modern world and what they can do to help through their own technology use.
Year 8	Data Representation in Computer Systems Students will learn that Binary is a Base 2 number system and what it is used to represent in a computer system. Students will learn how to convert Binary Numbers to Denary Numbers and vice versa.	Data Representation in Computer Systems Students will build on their prior knowledge from Autumn term and look at Binary calculations such as addition, multiplication and division. They will also look at how to convert binary and denary numbers in to Hexadecimal and learn how images are stored in Computer Systems	Python Programming Students will be introduced to the fundamentals of programming. They will learn the basic functions and constructs of programming such as sequencing instructions and the print function. Students will also learn how to take basic inputs and output them to screen as part of a string using concatenation	Python Programming Students will build on their knowledge in Spring 2 and will learn how to create selection statements in Python. They will begin to build more complex programs using all the skills they have covered.	Networking Students will be introduced to Networks learning about the different topologies. Students will consider why computers are connected to a network and	Networking Students will continue their study of topologies as well as looking at the treats to computer networks and methods do make sure they are kept secure. They will look at the difference between wired and wireless networks and the factors that affect the different layouts
Year 9	The CPU, main memory and Logic Students will begin the topic by looking at the Central Processing Unit (CPU). They will look at what makes a computer systems and the what the function of the RAM and ROM are. Students will then look at 3 of the logic gates (AND, OR and NOT) and the truth tables associated with these gates.	The CPU, main memory and Logic Students will develop their understanding of the logic gates and being building logic circuits using this knowledge. They will look at more complex truth tables as well as how to write logical expressions and logic problems in the real world.	Python Programming Students will refresh on the programming learnt in year 8 and build on this to create more complex solutions to problems. Students will look at combining conditions using Boolean logic when using Selection. Students will end the term by learning iteration and how loops can be used in their programs.	Python Programming Students will learn a Procedure First approach to programming. Students will learn how to write their own procedures taking in parameters from the main program and returning values back. They will then be creating solutions to problems which will require the use of multiple programming constructs.	Machine Learning and Artificial Intelligence Students will be introduced to the concept of machine learning. They will learn what is meant by machine learning and how we can use data to “teach” the system to recognise patterns. Students will also look at what technology currently uses this information and how it is protected as well as any ethical implications this has.	Machine Learning and Artificial Intelligence Students will use their knowledge on Machine Learning and look at how this is used with Artificial Intelligence. They will begin by looking at what artificial intelligence is and where it is currently being used. They will then consider the ethical implications of the use of this technology in the real world such as solving crimes.
Year 10	Programming Skills Students will develop on the programming skills learnt in Key Stage 3 and recap on the basic programming skills. Students will also look at iteration, procedures, arrays and records and files. Students will be asked to program programs using all the skills they have learnt in their lessons	Programming Fundamentals Students will use the programming skills to look at exam questions using their knowledge. They will understand the constructs, data types and fundamentals of programming as well as developing the programming skills they were recapping on in Autumn 1.	Data Representation Students will look at how data is stored in a computer systems including numbers, characters, sound and images. Students will also look at compression as well as its function. Student will also learn how to do binary conversions to both Hexadecimal and Binary and vice versa.	Systems Architecture, memory and storage In this topic students will look at the makeup of the computer system. They will learn the function of the main memory, secondary memory and the CPU. Students will look at computer architecture and factors that may impact the performance of the CPU	Algorithms This topic will look at how to write algorithms as both flowcharts and Pseudocode. Students will also look at how to sort and search for data items in lists and computational thinking (abstraction, decomposition and algorithmic thinking)	Logic and Languages Students will recap on what they have learnt at KS3 with relation to the logic gates and logic circuits. They will also look at how to design programs defensively and how we test programs to ensure they are robust.

Year 11	Revision – Programming and Algorithms Students will begin year 11 by refreshing their knowledge and understanding of programming and writing algorithms. Students will recap on the fundamentals of programming and the format and layout of writing algorithms to answer exam questions. They will also complete programming tasks in line with the course	Computer Networks and Network Security This topic will cover why we network computers, what the different topologies are as well as looking at MAC and IP addresses and client-servers vs peer-to-peer networks. Students will also look at the network securities learning both the risks and preventative measures that can be put in place to secure data.	Ethical, legal, cultural and environmental impact of technology In this topic students will consider the ethical, legal, cultural and environmental impacts computers systems pose. This includes looking at the laws that protect people's rights and what impact technology is having on the modern day world. Students will have to consider both the positive and negative implications all aspects pose.	Revision – focus on paper 1 Students will go through the content required for paper 1, recapping on the main topics and areas they have found challenging through their studies.	Revision – focus on programming and paper 2 Students will recap on all topics required for paper 2. This will include the programming and algorithm elements and how to use their skills to answer exam style questions	Revision – general Revision for this half term will be based on what the needs of the class are. Students will complete learning checklists and revision will be catered around the outcome of these.
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Year 10 core	Using Google Drive and it's features Students will look at Google Drive and Google Classroom and the features of both. Students will be shown how to create new documents, organise their drive and use all features on Google Classroom.	Email & Staying safe online Students will gain an insight in to how emails work, how to use the features of their school email accounts and how to structure emails. Students will also look at safe searches and how to protect themselves online including email scams, viruses and protecting identities	Using Word Processors Students will look at what Word Processors are and when it is appropriate to use them. Students will learn how to use some of the features of Word including formatting text, printing and saving their documents
Year 11 core	Using Presentation Software Students will look at presentation software and the features available to them. They will look at ways to present their data effectively.	Using Spreadsheet Software Students will gain an insight in to Spreadsheet software using Google Sheets to understand formulas, formatting and presentation of models and basic spreadsheets.	