

Curriculum Mapping in the Department of Computing and IT

	Year 7	Year 8	Year 9 Rotation	Year 10	Year 11
Autumn Term 1	<p>Topic: Introduction to using the computers.</p> <p>Knowledge: Rules and logging on, Create, save and open software applications and documents using the different network drives and the use of office 365 for Email and home learning.</p> <p>Skills: How to log on to the computer system and use the network drives effectively. Understand how to save, save as, open and close different application software and use of office 365 for home learning.</p> <p>NC Links: DL and IT</p>	<p>Topic: Esafety #Liveskills</p> <p>Knowledge: #Live Skills introduction to staying safe online including Self-esteem and confidence and Positive and unhealthy attention.</p> <p>Skills: How to stay safe online and protect your identity. Effective use of live streaming and reporting issues online.</p> <p>NC Links: DL and IT</p>	<p>Topic: Exploring User Interface Design Principles, Develop and review a user interface.</p> <p>Knowledge: assess how: effectively the user interface meets the audience's requirements, including their accessibility needs, skills level and demographics effectively. Different design principles will be used to allow both appropriate and effective user interactions with hardware devices, techniques have been used to allow users to efficiently interact with the interface. How to effectively design, create and refine a user interface system using chosen criteria and taking into account additional needs and design principals.</p> <p>Skills: effective user interface design, designing for additional and specific needs, knowing about interaction between systems and humans, understanding and applying design principals. Design, create and refine a user interface system</p> <p>NC Links: IT and DL</p>	<p>Topic: Exploring User Interface Design Principles and Project Planning Techniques - Develop and review a user interface</p> <p>Knowledge: how to develop and review a user interface for a specific audience and including additional needs.</p> <p>Skills: document writing, user needs, types of interfaces, design principals, critical assessment and user interaction with technology.</p> <p>AOs: A.2D1, A.2M1, A.2P1, A.2P2, A.1M1, A.1M2, A.1P1, A.1P2</p>	<p>Topic: Demonstrate knowledge of facts, terms, processes and issues in relation to digital information technology</p> <p>Knowledge: How current and modern technologies are used by and have an impact on organisations and their stakeholders.</p> <p>Skills: ways in which organisations and associated individuals use modern technologies to exchange information, communicate, and complete work-related tasks. Apply their knowledge to a range of vocational contexts. Understand how modern technologies impact on the way organisations perform tasks. Understand how technologies are used to manage teams, to enable stakeholders to access tools and services, and to communicate effectively. Understand the positive and negative impact that the use of modern technologies has on organisations and stakeholders.</p> <p>AOs: 1</p>

<p style="text-align: center;">Cross Curricular Link</p>	<p>All subjects: The effective use of the computer system.</p>	<p>English: Listening and observational skills</p> <p>PSHEcitizenship: relationships and positive self-image</p>	<p>Maths: statistics, calculating specifications and sizes</p> <p>Science: impact of IT on the environment</p> <p>English: professional report writing.</p>	<p>Maths: statistics, calculating specifications and sizes</p> <p>Science: impact of IT on the environment</p> <p>English: professional report writing.</p>	<p>Maths: Use of technology in different industries using maths</p> <p>Science: Use of technology in different industries using Science</p>
<p style="text-align: center;">Autumn Term 2</p>	<p>Topic: Esafety and Online Protection.</p> <p>Knowledge: How to stay safe and protect yourself online. Ways to report issues and become responsible and resilient digital citizens.</p> <p>Skills: How to effectively and safely use social media and the internet. Different ways to report online issues.</p> <p>NC Links: DL and IT</p>	<p>Topic: Esafety Market place</p> <p>Knowledge: understanding of key safety messages on several online safety topics Including confidence and skills in articulating and discussing complex issues around sex, relationships and the internet.</p> <p>Skills: how to responsibly behave online and know how to report issues to the relevant authorities. Be able to protect themselves and others online.</p> <p>NC Links: DL and IT</p>	<p>Topic: Collecting, Presenting and Interpreting Data - Investigate the role and impact of using data on individuals and organisations Create a dashboard using data manipulation tools and draw conclusions and review data presentation methods.</p> <p>Knowledge: understanding of how two different sectors use data to make decisions, including data collection methods and its features. How data is used across two different sectors in order to make decisions.</p> <p>Skills: Give relevant examples in the context of each sector. Link between the data collection methods used and how these can affect the data. Make a direct link between the collection methods/features and how they affect the quality of data. Know weaknesses of both their project plan and their user interface. Select and use different data manipulation tools to manipulate the data in a large data set and produce data summaries. Use a dashboard to make conclusions and recommendations. How the</p>	<p>Topic: Exploring User Interface Design Principles and Project Planning Techniques - Use project planning techniques to plan and design a user interface</p> <p>Knowledge: How to plan for a project thoroughly making meticulous use of planning techniques used in industry.</p> <p>Skills: task lists, mind maps, user requirements, Gantt charts, pert charts, risk registers and contingency planning.</p> <p>AOs: B.2D2, B.2M2, B.2P3, B.1M3, B.1M4, B.1P3</p>	<p>Topic: Apply an understanding of facts, terms, processes and issues in relation to digital information technology</p> <p>Knowledge: Understand how the increased reliance of organisations on digital systems to hold data and perform vital functions presents a range of challenges and dangers.</p> <p>Skills: Understand the nature of threats to digital systems and ways that they can be mitigated through organisation policy, procedures and the actions of individuals. Apply knowledge of cyber security to a range of vocational contexts. Understand how different measures can be implemented to protect digital systems. Realise the purpose of different systems and how their features and functionality protect digital systems. Understand how one or more systems or procedures can be used to reduce the nature and/or impact of threats.</p>

			<p>presentation features affected the conclusions and recommendations made. We link with the Geography, Maths and Science departments throughout this module to look at the various graphs they use to display their data.</p> <p>NC Links: IT and DL</p>		<p>Recognise the need for and nature of security policies in organisations. Understand the content that constitutes a good security policy and how it is communicated to individuals in an organisation. Ensure that potential threats and the impact of security breaches are minimised. Understand how procedures in security policies are implemented in organisations.</p> <p>AOs: 2</p>
<p>Cross Curricular Link</p>	<p>English - Comprehension SEMH – Child online protection, sexual exploitation. Citizenship – Positive relationships</p>	<p>English: writing and presenting ideas Maths: statistics SEMH: child online protection, sexual exploitation PSHE/citizenship: positive relationships</p>	<p>Maths: look at real life data and how to collect, analyse and eliminate bias. Various graphs real life data and how to collect, analyse and eliminate bias. Science: Data collection and analysis and analysing experimental results Geography: Data Collection and Analysis. Display data in different forms</p>	<p>Maths: time management and estimation Science: hypothesis and estimation Business: Planning projects, SMART Targets</p>	<p>Maths: Impact of technology in different industries using maths Science: Impact of technology in different industries using Science</p>
<p>Spring Term 1</p>	<p>Topic: Computing – Scratch Programming Knowledge: How to use a block based programming language to create programs that do specific things. Skills: Computational Thinking, including decomposition, pattern recognition, abstraction, pattern generalisation and algorithm design NC Links: IT and CS</p>	<p>Topic: Python/Micropython Knowledge: know how to solve computational problems using different concepts: sequence, selection and repetition. Skills: Text based computational Thinking, including decomposition, pattern recognition, abstraction, pattern generalisation and algorithm design</p>	<p>Topic: Exploring User Interface Design Principles, Develop and review a user interface. Knowledge: assess how: effectively the user interface meets the audience's requirements, including their accessibility needs, skills level and demographics effectively. Different design principles will be used to allow both appropriate and effective user interactions with hardware</p>	<p>Topic: Exploring User Interface Design Principles and Project Planning Techniques - Develop and review a user interface Knowledge: How to effectively design, create and refine a user interface system using chosen criteria and taking into account additional needs and design principals. Skills: design, create and refine a user interface system</p>	<p>Topic: Analyse, evaluate and make reasoned judgements about the use, factors and implications influencing digital information technology Knowledge: understand the wider implications of digital systems and their use. Skills: Understand how legislation covering data protection, computer</p>

		<p>NC Links: CS and IT</p>	<p>devices, techniques have been used to allow users to efficiently interact with the interface. How to effectively design, create and refine a user interface system using chosen criteria and taking into account additional needs and design principals.</p> <p>Skills: effective user interface design, designing for additional and specific needs, knowing about interaction between systems and humans, understanding and applying design principals. Design, create and refine a user interface system</p> <p>NC Links: IT and DL</p>	<p>AOs: C.2D3, C.2M2, C.2P5, C.2P6, C.1M5, C.1M6, C.1P5, C.1P6</p>	<p>crimes and intellectual property has an impact on the way that organisations and individuals use digital systems and data. Understand the procedures that organisations must follow in order to conform to legal requirements and professional guidelines. Consider the responsible use of digital systems, including how systems and services share and exchange data as well as the environmental considerations of increased use. Recognise the scope and purpose of legislation (valid at time of delivery) that governs the use of digital systems and data, and how it has an impact on the ways in which organisations use and implement digital systems. Understand the wider ethical considerations of use of technologies, data and information, and organisations' responsibilities to ensure that they behave in an ethical manner.</p> <p>AOs:3</p>
<p>Cross Curricular Link</p>	<p>Maths: coordinates, patterns, number systems, relational operators. Science: hypothesis and testing of theories. English: writing instructions and decomposition of text.</p>	<p>Maths: Binary, Boolean, arithmetic operators, relational operators, integers and floats (decimals), logical operators, variables, iteration and random.</p>	<p>Maths: statistics, calculating specifications and sizes Science: impact of IT on the environment English: professional report writing.</p>	<p>Maths: dimensions, symmetry and Science:</p>	<p>Maths: Ethical use of technology in different industries using maths Science: Ethical of technology in different industries using Geography: Ethical use of technology in different</p>

		<p>English: Syntax, understanding keywords, explanations through written tasks.</p> <p>Science: Arithmetic operators, relational operators, integers and floats (decimals), logical operators, variables, iteration and random.</p> <p>MFL: use of a translator from English to French and Spanish</p>			industries for the environment.
Spring term 2	<p>Topic: Computing – Scratch Programming</p> <p>Knowledge: How to use a block based programming language to create programs that do specific things.</p> <p>Skills: Computational Thinking, including decomposition, pattern recognition, abstraction, pattern generalisation and algorithm design</p> <p>NC Links: IT and CS</p>	<p>Topic: Python/Micropython</p> <p>Knowledge: know how to solve computational problems using different concepts: sequence, selection and repetition.</p> <p>Skills: Text based computational Thinking, including decomposition, pattern recognition, abstraction, pattern generalisation and algorithm design</p> <p>NC Links: CS and IT</p>	<p>Topic: Collecting, Presenting and Interpreting Data - Investigate the role and impact of using data on individuals and organisations Create a dashboard using data manipulation tools and draw conclusions and review data presentation methods.</p> <p>Knowledge: understanding of how two different sectors use data to make decisions, including data collection methods and its features. How data is used across two different sectors in order to make decisions.</p> <p>Skills: Give relevant examples in the context of each sector. Link between the data collection methods used and how these can affect the data. Make a direct link between the collection methods/features and how they affect the quality of data. Know weaknesses of both their project plan and their user interface. Select and use different data manipulation tools to manipulate the data in a large data set and produce data</p>	<p>Topic: Collecting, Presenting and Interpreting Data - Investigate the role and impact of using data on individuals and organisations</p> <p>Knowledge: understanding of how two different sectors use data to make decisions, including data collection methods and its features.</p> <p>Skills: Give relevant examples in the context of each sector. Link between the data collection methods used and how these can affect the data. Make a direct link between the collection methods/features and how they affect the quality of data. Know weaknesses of both their project plan and their user interface.</p> <p>AOs: A.2D1, A.2M1, A.2P1, A.2P2, A.1M1, A.1M2, A.1P1, A.1P2</p>	<p>Topic: Make connections with the concepts, issues, terms and processes in digital information technology</p> <p>Knowledge: Understand how individuals in the digital sector plan solutions and communicate meaning and intention.</p> <p>Skills: Understand how different forms of written and diagrammatical communication can be used to express understanding and demonstrate the flow of data and information.</p> <p>AOs: 4</p>

			<p>summaries. Use a dashboard to make conclusions and recommendations. How the presentation features affected the conclusions and recommendations made. We link with the Geography, Maths and Science departments throughout this module to look at the various graphs they use to display their data.</p> <p>NC Links: IT and DL</p>		
<p>Cross Curricular Link</p>	<p>Maths: coordinates, patterns, number systems, relational operators. Science: hypothesis and testing of theories. English: writing instructions and decomposition of text.</p>	<p>Maths: Binary, Boolean, arithmetic operators, relational operators, integers and floats (decimals), logical operators, variables, iteration and random.</p> <p>English: Syntax, understanding keywords, explanations through written tasks. Science: Arithmetic operators, relational operators, integers and floats (decimals), logical operators, variables, iteration and random. Art: designing images D&T: use of microprocessors, sensors and robotics.</p>	<p>Maths: look at real life data and how to collect, analyse and eliminate bias. Various graphs real life data and how to collect, analyse and eliminate bias. Science: Data collection and analysis and analysing experimental results Geography: Data Collection and Analysis. Display data in different forms</p>	<p>Maths: look at real life data and how to collect, analyse and eliminate bias. Science: Data collection and analysis Geography: Data Collection and Analysis</p>	<p>Maths: Data flow Science: Data flow</p>
<p>Summer Term 1</p>	<p>Topic: Networking Semaphores and the internet</p> <p>Knowledge: What is a network and the evolution of networks including hardware. Knowing what the internet and the WWW is.</p> <p>Skills: identifying what a network is and being able to</p>	<p>Topic: Heros</p> <p>Knowledge: understanding how data is collected, collated and analysed. Understanding the most suitable software for different tasks. Understanding how testing and refining is a key part of creating publications.</p>	<p>Topic: Exploring User Interface Design Principles, Develop and review a user interface.</p> <p>Knowledge: assess how: effectively the user interface meets the audience's requirements, including their accessibility needs, skills level and demographics effectively. Different design principles will be used to allow both</p>	<p>Topic: Interpreting Data - Create a dashboard using data manipulation tools and draw conclusions and review data presentation methods. Knowledge: how data is used across two different sectors in order to make decisions. Skills: Select and use different data</p>	<p>Topic: Revision And Final Examinations</p> <p>Knowledge: How current and modern technologies are used by and have an impact on organisations and their stakeholders. Understand the wider implications of digital systems and their use. Understand how individuals in the digital</p>

	<p>identify which networks are used for different things. Be able to identify the key components of a network, both wired and wireless including different wireless technologies (3g, 4g)</p> <p>NC Links: CS</p>	<p>Skills: How to effectively gather data and analyse it using spreadsheet software to present the data and generating information from the data. Designing professional publications using suitable software.</p> <p>NC Links: DL and IT</p>	<p>appropriate and effective user interactions with hardware devices, techniques have been used to allow users to efficiently interact with the interface. How to effectively design, create and refine a user interface system using chosen criteria and taking into account additional needs and design principals.</p> <p>Skills: effective user interface design, designing for additional and specific needs, knowing about interaction between systems and humans, understanding and applying design principals. Design, create and refine a user interface system</p> <p>NC Links: IT and DL</p>	<p>manipulation tools to manipulate the data in a large data set and produce data summaries. Show their data summaries on a dashboard. Use a dashboard to make conclusions and recommendations. How the presentation features affected the conclusions and recommendations made.</p> <p>We link with the Geography, Maths and Science departments throughout this module to look at the various graphs they use to display their data.</p> <p>AOs: B.2D2, B.2M2, B.2P3, B.2P4, B.1M3, B.1M4, B.1P3 B.1P4</p>	<p>sector plan solutions and communicate meaning and intention.</p> <p>Skills: ways in which organisations and associated individuals use modern technologies to exchange information, communicate, and complete work-related tasks.</p> <p>Understand the nature of threats to digital systems and ways that they can be mitigated through organisation policy, procedures and the actions of individuals. Understand how legislation covering data protection, computer crimes and intellectual property has an impact on the way that organisations and individuals use digital systems and data.</p> <p>Understand how different forms of written and diagrammatical communication can be used to express understanding and demonstrate the flow of data and information.</p> <p>AOs: 1, 2, 3, 4</p>
<p>Cross Curricular Link</p>	<p>Maths: Logic and estimation Geography: network topologies, Local, National, international and personal. History: How and why networks and the internet were created and how they has supported many historical events.</p>	<p>History: knowing the history of the computer science industry and famous computer scientists that have made an impact on the world. Maths: collecting and analysing data. English: writing articles for a magazine.</p>	<p>Maths: statistics, calculating specifications and sizes Science: impact of IT on the environment English: professional report writing.</p>	<p>Maths: various graphs Science: various graphs Geography: various graphs</p>	<p>Maths: Use of technology in different industries using maths Impact of technology in different industries using maths Ethical use of technology in different industries using maths</p>

	<p>Science: The impact of the Internet on the environment and society</p>	<p>Business: creating questionnaires and analysing data.</p>			<p>Data flow</p> <p>Geography: Ethical use of technology in different industries for the environment.</p> <p>Science: Use of technology in different industries using Science Impact of technology in different industries using Science Ethical of technology in different industries using Data flow</p>
<p>Summer Term 2</p>	<p>Topic: Media, Impacts of Technology</p> <p>Knowledge: Know how to effectively use word processing software and know about different licensing laws and credibility of content on the internet. Know what Internet services there are and how they can improve our working practices.</p> <p>Skills: How to use Microsoft Word features and tools to effectively get the best use of the software for different needs. Be able to use the internet and different internet services effectively to support effective working practices.</p> <p>NC Links: IT, DL and CS</p>	<p>Topic: Cybersecurity</p> <p>Knowledge: knowing about different data and your data. Knowing how to protect individuals from social engineering and other cyber security risks such as bots and viruses.</p> <p>Skills: Be able to safely use the internet recognising the dangers that exist and how they can prevent this from happening to them and others.</p> <p>NC Links: DL, IT and CS</p>	<p>Topic: Collecting, Presenting and Interpreting Data - Investigate the role and impact of using data on individuals and organisations Create a dashboard using data manipulation tools and draw conclusions and review data presentation methods.</p> <p>Knowledge: understanding of how two different sectors use data to make decisions, including data collection methods and its features. How data is used across two different sectors in order to make decisions.</p> <p>Skills: Give relevant examples in the context of each sector. Link between the data collection methods used and how these can affect the data. Make a direct link between the collection methods/features and how they affect the quality of data. Know weaknesses of both</p>	<p>Topic: Collecting, Presenting and Interpreting Data - Draw conclusions and review data presentation methods.</p> <p>Knowledge: use a dashboard effectively to make relevant and specific conclusions. They will then be able to use their conclusions to make appropriate recommendations.</p> <p>Skills: full awareness of how the presentation methods used lead to data not being biased, misunderstood or being used to make inaccurate decisions. Use their conclusions to make appropriate recommendations.</p> <p>AOs: C.2D3, C.2M3, C.2P5, C.2P6, C.1M5, C.1M6, C.1P5, C.1P6</p>	

			<p>their project plan and their user interface. Select and use different data manipulation tools to manipulate the data in a large data set and produce data summaries. Use a dashboard to make conclusions and recommendations. How the presentation features affected the conclusions and recommendations made. We link with the Geography, Maths and Science departments throughout this module to look at the various graphs they use to display their data.</p> <p>NC Links: IT and DL</p>		
<p>Cross Curricular Link</p>	<p>English: persuasive writing for a newspaper article. Looking at credibility of texts and identifying facts to write a persuasive article about the media.</p> <p>History/Geography: researching case studies, highlighting credibility of data and texts and using facts to write a persuasive argument.</p>	<p>Maths: data manipulation and use of mathematical operators and Boolean in scripts.</p> <p>PSHE: identifying how to stay safe online and protect your data.</p> <p>English: reading of articles related to cyber security and identifying key points for discussion.</p>	<p>Maths: look at real life data and how to collect, analyse and eliminate bias. Various graphs real life data and how to collect, analyse and eliminate bias.</p> <p>Science: Data collection and analysis and analysing experimental results</p> <p>Geography: Data Collection and Analysis. Display data in different forms</p>	<p>Maths: Interpreting and displaying data</p> <p>Science: Interpreting and displaying data</p> <p>Geography: Interpreting and displaying data</p>	