



LATHOM
HIGH SCHOOL

Glenburn Road, Skelmersdale, Lancashire WN8 6JN

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Headteacher: Mrs J M Galbraith

Curriculum Overview Computing and Business Department

	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
Year 7	<p>Getting Started at Lathom (KS4 Link Digital Literacy and iMedia R093)</p> <p><u>Knowledge</u></p> <p>What is a cloud computing/computer networks and an acceptable use policy? How do I know which websites are trustworthy? How do I use a computer safely and responsibly? What is a strong password? What email/VLE does my school use? What are the differences between files and folders? What is a vector/bitmap?</p> <p><u>Key Skills</u></p> <ul style="list-style-type: none"> - Access, save and store work correctly on the school network/VLE and at home -Use key principles of internet research -Use the Internet safely and responsibly 	<p>Introducing Spreadsheets (KS4 Link Business)</p> <p><u>Knowledge</u></p> <p>What is a spreadsheet? How do formulae calculate using replication and referencing? What SUM/AVERAGE/MAX/MIN functions do? How are Boolean Operators used in Spreadsheets? What do we mean by the term modelling? IF and COUNT functions are useful, why? Why do we format spreadsheets and why are charts/graphs useful when solving a problem?</p> <p><u>Key Skills</u></p> <ul style="list-style-type: none"> -Use spreadsheets effectively and efficiently to perform a range of activities 	<p>Computing: Past, Present and Future (KS4 Link Digital Literacy)</p> <p><u>Knowledge</u></p> <p>What do we actually mean by the term compute? How has word processing developed over the years? What are the contrasting features in old vs new technologies? What is the design cycle? Why is Moore's Law important in understanding how technology works? Who are the important figures in the development of computing? What makes a good presentation?</p> <p><u>Key Skills</u></p> <ul style="list-style-type: none"> -Use the design cycle with both basic and advanced features in a range of software to present and report findings on Moor's Law and the History of Computing 	<p>Computing Components (KS4 Link Computer Science)</p> <p><u>Knowledge</u></p> <p>What are the components of a computer and what is their purpose? How is storage capacity and speed measured? Can you identify computer peripherals and name the input and output devices? What is the difference between storage devices and storage media? What is the Internet of Things (IOT)? What are the benefits and drawbacks of IOT?</p> <p><u>Key Skills</u></p> <ul style="list-style-type: none"> -Justify choices of computer hardware and storage mediums for a given scenario 	<p>Programming in Scratch (KS4 Link Computer Science)</p> <p><u>Knowledge</u></p> <p>Can you name the main areas of the Scratch environment? What is sequencing? How can sequencing be used to decompose a complex problem? Why does identifying patterns play such an important part in writing efficient code? What is a variable? Can you define selection? What do you use to carry out multiple condition checks? Why is iteration used in programming?</p> <p><u>Key Skills</u></p> <ul style="list-style-type: none"> -Use the three key programming constructs (sequence, selection, iteration) in a range of block performing activities 	<p>Programming in Python: Sequence (KS4 Link Computer Science)</p> <p><u>Knowledge</u></p> <p>What is a computer program? Is a variable in Python the same as a variable in Scratch? Why do we use variables? Why do we need to consider the programs output when meeting the needs of the end user? What are data types? What do we mean by arithmetic operators? Why are place holders used? How do we identify characters in a string?</p> <p><u>Key Skills</u></p> <ul style="list-style-type: none"> -Create a program in Python that asks for user input and produce a suitable output

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Year 8	<p>Internet Safety Security and Encryption (KS4 Link Digital Literacy)</p> <p><u>Knowledge</u></p> <p>What do we mean by digital footprint? What are the characteristics of a strong password? How is phishing used? What the different types of malware? What do mean by encryption? What is an automated encryption? How can you keep yourself safe online?</p> <p><u>Key Skills</u></p> <p>-Behave responsibly online and keep data secure by using anti-malware and encryption</p>	<p>Introducing Spreadsheets (KS4 Link Business RO65)</p> <p><u>Knowledge</u></p> <p>What is a spreadsheet? How do formulae calculate using replication and referencing? What SUM/AVERAGE/MAX/MIN functions do? How are Boolean Operators used in Spreadsheets? What do we mean by the term modelling? IF and COUNT functions are useful, why? Why do we format spreadsheets and why are charts/graphs useful when solving a problem?</p> <p><u>Key Skills</u></p> <p>-Use spreadsheets effectively and efficiently to perform a range of activities</p>	<p>Computing: Past, Present and Future (KS4 Link Digital Literacy)</p> <p><u>Knowledge</u></p> <p>What do we actually mean by the term compute? How has word processing developed over the years? What are the contrasting features in old vs new technologies? What is the design cycle? Why is Moore’s Law important in understanding how technology works? Who are the important figures in the development of computing? What makes a good presentation?</p> <p><u>Key Skills</u></p> <p>-Use the design cycle with both basic and advanced features in a range of software to present and report findings on Moore’s Law and the History of Computing</p>	<p>Sound and Video Editing (KS4 Link iMedia RO97)</p> <p><u>Knowledge</u></p> <p>What is sound editing software? What peripherals are used sound editing software? What does import mean? What basic audio effects can be used to improve compositions? Why is planning an important aspect of film/video production? What do we mean by assets? Why are transitions used between video clips?</p> <p><u>Key Skills</u></p> <p>-Use sound editing software, including audio effects, to create soundtracks -Use video editing software to combine audio and video to create a video advert.</p>	<p>Algorithms (KS4 Link Computer Science)</p> <p><u>Knowledge</u></p> <p>What is computational thinking? How are abstraction and decomposition used in computational thinking? What is an algorithm? How is pattern recognition used in problem solving? What is meant by a modular approach in programming? How are flow diagrams related algorithms? How can computational thinking help understand an epidemic?</p> <p><u>Key Skills</u></p> <p>-Use a logical, strategic approach to problem-solving involving the four cornerstones: decomposition, abstraction, and pattern recognition to formulate an effective and efficient algorithm</p>	<p>Programming in Python: Sequence (KS4 Link Computer Science)</p> <p><u>Knowledge</u></p> <p>What is a computer program? Is a variable in Python the same as a variable in Scratch? Why do we use variables? Why do we need to consider the programs output when meeting the needs of the end user? What are data types? What do we mean by arithmetic operators? Why are place holders used? How do we identify characters in a string?</p> <p><u>Key Skills</u></p> <p>-Create a program in Python that asks for user input and produce a suitable output</p>

<p>Year 9</p>	<p>Internet Safety Security and Encryption (KS4 Link Digital Literacy)</p> <p><u>Knowledge</u></p> <p>What do we mean by digital footprint? What are the characteristics of a strong password? How is phishing used? What the different types of malware? What do mean by encryption? What is an automated encryption? How can you keep yourself safe online?</p> <p><u>Key Skills</u></p> <p>-Behave responsibly online and keep data secure by using anti-malware and encryption</p>	<p>Introducing Spreadsheets (KS4 Link Business RO65)</p> <p><u>Knowledge</u></p> <p>What is a spreadsheet? How do formulae calculate using replication and referencing? What SUM/AVERAGE/MAX/MIN functions do? How are Boolean Operators used in Spreadsheets? What do we mean by the term modelling? IF and COUNT functions are useful, why? Why do we format spreadsheets and why are charts/graphs useful when solving a problem?</p> <p><u>Key Skills</u></p> <p>-Use spreadsheets effectively and efficiently to perform a range of activities</p>	<p>Computing: Past, Present and Future (KS4 Link Digital Literacy)</p> <p><u>Knowledge</u></p> <p>What do we actually mean by the term compute? How has word processing developed over the years? What are the contrasting features in old vs new technologies? What is the design cycle? Why is Moore’s Law important in understanding how technology works? Who are the important figures in the development of computing? What makes a good presentation?</p> <p><u>Key Skills</u></p> <p>-Use the design cycle with both basic and advanced features in a range of software to present and report findings on Moore’s Law and the History of Computing</p>	<p>Sound and Video Editing (KS4 Link iMedia RO97)</p> <p><u>Knowledge</u></p> <p>What is sound editing software? What peripherals are need to use sound editing software? What does import mean? What basic audio effects can be used to improve compositions? Why is planning an important aspect of film/video production? What do we mean by assets? Why are transitions used between video clips?</p> <p><u>Key Skills</u></p> <p>-Use sound editing software, including audio effects, to create soundtracks -Use video editing software to combine audio and video to create a video advert.</p>	<p>Algorithms (KS4 Link Computer Science)</p> <p><u>Knowledge</u></p> <p>What is computational thinking? How are abstraction and decomposition used in computational thinking? What is an algorithm? How is pattern recognition used in problem solving? What is meant by a modular approach in programming? How are flow diagrams related algorithms? How can computational thinking help understand an epidemic?</p> <p><u>Key Skills</u></p> <p>-Use a logical, strategic approach to problem-solving involving the four cornerstones: decomposition, abstraction, and pattern recognition to formulate an effective and efficient algorithm</p>	<p>Programming in Python: Sequence (KS4 Link Computer Science)</p> <p><u>Knowledge</u></p> <p>What is a computer program? Is a variable in Python the same as a variable in Scratch? Why do we use variables? Why do we need to consider the programs output when meeting the needs of the end user? What are data types? What do we mean by arithmetic operators? Why are place holders used? How do we identify characters in a string?</p> <p><u>Key Skills</u></p> <p>-Create a program in Python that asks for user input and produce a suitable output</p>
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Year 10 iMedia	<p>Year 10: Unit RO81 Pre-Production Skills</p> <p><u>Knowledge</u></p> <p>RO81 LO1: Do you understand the purpose and content of pre production of the following: Moodboards, Mindmaps, Visualisation Diagrams, Storyboards, Scripts? RO81 LO2: Do you know how to plan pre-production documents such as client brief, research, workplans, target audience, hardware and software requirements, health and safety considerations and legislation in media production?</p> <p><u>Key Skills (Coursework)</u></p> <p>-Create pre-production documents.</p>	<p>Year 10: Unit RO81 Pre-Production Skills Unit RO82: Graphics</p> <p><u>Knowledge</u></p> <p>RO81 LO3: Can you produce pre-production documents for a given scenario? RO82 LO1: Do you know the purpose and properties of digital graphics? RO82 LO2: Can you create pre-production documents for graphic creations?</p> <p><u>Key Skills (Coursework)</u></p> <p>-Create pre-production documents in relation to the given project scenario.</p>	<p>Year 10: Unit RO82: Graphics</p> <p><u>Knowledge</u></p> <p>RO82 LO3: Can you create and save a digital graphic.</p> <p><u>Key Skills (Coursework)</u></p> <p>-Source assets and create assets for use in a digital graphic using standard and advanced tools in image editing software</p>	<p>Year 10: Unit RO81 Pre-Production Skills Unit RO82 Graphics</p> <p><u>Knowledge</u></p> <p>RO81 LO4: How do you review a digital graphic? RO82 LO4: What can be improved on your final digital graphic?</p> <p><u>Key Skills (Coursework)</u></p> <p>-Review digital graphics and identify areas for improvement and further development</p>	<p>Year 10: RO81 Revision Pre-Production Skills Unit RO82: Graphics Submission</p> <p><u>Knowledge</u></p> <p>RO81: Pre-production <u>Tier 2</u> Mind maps/Purpose Audience/Interpret Techniques Strengths/Weaknesses <u>Tier 3</u> Moodboards Visualisation diagrams Client requirements Target audience Work plans Production schedules</p> <p>RO82: Graphics <u>Tier 2</u> Entertain/Advertise Promote/Inform Educate/Layout Content/Planning Research/Specification <u>Tier 3</u> Bitmap/Raster Vector/Lossy Compression Pixel dimensions DPI resolution Composition/Balance <u>Key Skills</u> -Prepare for the exam using command and key words</p>	<p>Year 10: Unit RO85 Websites</p> <p><u>Knowledge</u></p> <p>RO85 LO1: Do you know the purpose, components and features of websites? What devices can be sued to access webpages? What types of internet connections are available</p> <p><u>Key Skills (Coursework)</u></p> <p>-Review and consider the suitability of a websites, explaining how different purposes and audiences affect the design and layout of website interface -Describe the different devices used to access webpages an evaluate the different methods of internet connection</p>

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Year 11 iMedia	<p>Year 11: Unit RO85: Websites</p> <p><u>Knowledge</u></p> <p>RO85 LO1: Do you know the purpose, components and features of websites? What devices can be used to access webpages? What types of internet connections are available?</p> <p><u>Key Skills (Coursework)</u></p> <p>-Review and consider the suitability of a websites, explaining how different purposes and audiences affect the design and layout of website interface -Describe the different devices used to access webpages and evaluate the different methods of internet connection</p>	<p>Year 11: Unit RO85 Websites Unit RO81 Pre-production</p> <p><u>Knowledge</u></p> <p>RO81 LO2: Do you know how to plan pre-production documents such as client brief, research, workplans, target audience, hardware and software requirements, health and safety considerations and legislation in media production? RO85 LO2: Which pre-production documents are needed for a website?</p> <p><u>Key Skills (Coursework)</u></p> <p>-Interpret client requirements and target audience for a graphic design scenario create the pre-production documents in relation to the given project scenario</p>	<p>Year 11: RO85 Websites</p> <p><u>Knowledge</u></p> <p>RO81 LO3: From a set scenario, can you produce the media product?</p> <p><u>Key Skills (Coursework)</u></p> <p>-Create a website correctly using standard and advanced tools in web authoring software</p>	<p>Year 11: RO81 Revision RO81: Pre-production</p> <p><u>Knowledge</u></p> <p>RO81 LO4: How do you review a digital graphic? RO82 LO4: What can be improved on your final digital graphic?</p> <p><u>Key Skills (Coursework)</u></p> <p>-Review the website and identify areas for improvement and further development</p>	<p>Year 11: RO81 Resits RO85 Submission</p> <p><u>Knowledge</u></p> <p>RO81: Pre-production <i>Tier 2</i> Mind maps/Purpose Audience/Interpret Techniques Strengths/Weaknesses <i>Tier 3</i> Moodboards Visualisation diagrams Client requirements Target audience Work plans Production schedules</p> <p>RO82: Graphics <i>Tier 2</i> Entertain/Advertise Promote/Inform Educate/Layout Content/Planning Research/Specification <i>Tier 3</i> Bitmap/Raster Vector/Lossy Compression Pixel dimensions DPI resolution Composition/Balance</p> <p><u>Key Skills</u> -Prepare for the exam using command and key words</p>	

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Year 10 Business	<p>Year 10: Unit RO64 Concepts & Unit RO55 Business Proposal</p> <p><u>Knowledge</u> RO64 LO1: How do you target a market? RO65 LO1 and LO2: What goes on a customer profile? What are the benefits of market segmentation?</p> <p><u>Key Skills</u> Create a customer profile and design a report that explains the benefits of market segmentation for a business. Demonstrate market research skills by analysing and creating primary and secondary research related to a business challenge.</p>	<p>Year 10: Unit RO64 Concepts & Unit RO55 Business Proposal</p> <p><u>Knowledge</u> RO64 LO3: How is a product developed? RO65 LO3: How does your product design fit the challenge? What is the SCAMPER model? Why is it important to complete a SWOT analysis?</p> <p><u>Key Skills</u> Develop a design proposal for a business challenge.</p>	<p>Year 10: Unit RO64 Concepts & Unit RO55 Business Proposal</p> <p><u>Knowledge</u> RO64 LO2: Why are costs, revenue, profit and break even charts crucial to the survival of a business? RO65 LO4: What makes a product/service financially viable?</p> <p><u>Key Skills</u> Review whether a business proposal is viable using financial knowledge.</p>	<p>Year 10: Unit RO64 Concepts & Unit RO55 Business Proposal</p> <p><u>Knowledge</u> RO64 LO4: How do businesses attract and retain customers? RO65 LO4: Why do businesses use different pricing strategies?</p> <p><u>Key Skills</u> Evaluate key pricing decisions on a business proposal and identify the challenges when launching a new product.</p>	<p><u>Knowledge</u> Revision of Unit RO64. Exam</p> <p><u>Key Skills</u> Submit RO55 Business Proposal</p>	<p>Year 10: Unit RO66 Market and Pitch a Business</p> <p><u>Knowledge</u> RO65 LO1: What is a brand? How do following elements contribute to the making of a brand? Strategy? Brand personality? Identity? Image? Why do businesses set themselves promotional objectives?</p> <p><u>Key Skills</u> Build a unique brand and promotional plan for your business challenge.</p>

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Year 11 Business	<p>Year 11: Unit RO66 Market and Pitch a Business</p> <p><u>Knowledge</u> RO65 LO1: What is a brand? How do following elements contribute to the making of a brand? Strategy? Brand personality? Identity? Image? Why do businesses set themselves promotional objectives?</p> <p><u>Key Skills</u> Build a unique brand and promotional plan for your business challenge.</p>	<p>Year 11: Unit RO66 Market and Pitch a Business</p> <p><u>Knowledge</u> RO65 LO2: What is a pitch? What resources are needed to enable you to prepare a pitch for potential investors?</p> <p><u>Key Skills</u> Plan a successful pitch.</p>	<p>Year 11: Unit RO66 Market and Pitch a Business</p> <p><u>Knowledge</u> RO65 LO3: What personal and presentation skills are required for a professional pitch?</p> <p><u>Key Skills</u> Deliver a professional pitch of your Business Proposal to an external audience.</p>	<p>Year 11: Unit RO66 Market and Pitch a Business</p> <p><u>Knowledge</u> RO65: LO4 How can reviewing a proposal and pitch help you improve your performance in future?</p> <p><u>Key Skills</u> Review the strengths and weaknesses of a proposal and pitch.</p>	<p>Year 11: RO64 Resit Revision</p> <p><u>Knowledge</u> Revision of RO64</p> <p><u>Key Skills</u> Submission of RO66 Pitch</p>	

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<p>Year 10 Computer Science OCR 277</p>	<p>Python Recap Python Programming: Project/Assignment</p> <p><u>Knowledge</u> What is a computer program? All students to be given the opportunity to undertake a programming task using Python as part of the OCR specification.</p> <p><u>Key Skills</u> -Design, write, test, and refine in Python</p>	<p>1.2 Memory and Storage & 1.6 Ethical, Legal, Cultural and environmental impacts of digital technology</p> <p><u>Knowledge</u> Why do we need Primary / Secondary Storage? What is RAM/ROM? What is the difference between RAM/ROM? What is virtual memory? Why do we need secondary storage? What are the advantages and disadvantages of different type of storage devices? What are the units of storage? What is Binary? How is binary used for characters, images and sound? How can we use compression? What are the impacts of digital technology on wider society. What issues are there with the impact of technology. What is the digital divide? What legislation is in place relevant to Computer Science?</p> <p><u>Key Skills</u> -Advise what memory and storage someone should have for a home computer. -Count using binary numbers</p>	<p>1.4 Network Security & 2.4 Boolean Logic</p> <p><u>Knowledge</u> What forms of attack can happen to a computer system or network? What is social engineering? Why should I keep my password safe? How can I identify and prevent vulnerabilities on a network? What is a firewall? What is malware?</p> <p>What are the operators for logic gates AND, OR and NOT? What is a truth table? How to I apply logical operators in truth tables to solve problems?</p> <p><u>Key Skills</u> -Choose secure passwords and know the danger of reusing passwords. -Spot scams online and encrypt and decrypt messages</p>	<p>2.1 Algorithms</p> <p><u>Knowledge</u> What is computational thinking? What is an input, output and process for a problem? How do I use pseudocode/ Flowcharts. What is a trace table? What is a binary /linear search? How do I sort using bubble/merge and insertion techniques?</p> <p><u>Key Skills</u> -Draw and develop flowcharts and trace tables using symbols</p>	<p>2.2 Programming Fundamentals</p> <p><u>Knowledge</u> What is a variable, constant, operator, input output and assignments? What are the three basic programming constructs? What are Boolean operators? What are data types? How can I search an SQL database? What is an array? How can I create a random number using coding?</p> <p><u>Key Skills</u> -Use the three key programming constructs (sequence selection iteration) in python activities. -Search an SQL database for information</p>	<p>2.5 Programming Languages and Integrated Development Environments.</p> <p><u>Knowledge</u> What is the difference between a high level and low-level language? What is the purpose of a translator/ compiler and interpreter? What tools do we need to make a program?</p> <p><u>Key Skills</u> - Compare the differences between High-level and Low-Level languages. - Identify features of an Integrated Development Environment</p>

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Year 11 Computer Science OCR J277	1.5 Systems Software <u>Knowledge</u> What is the purpose and functionality of operating systems? What is the purpose and functionality of utility software? What is data compression? How and why should I encrypt files? <u>Key Skills</u> -Explain the features of an operating system and purpose of utility software -Encrypt and decrypt basic text files. -Compress files in a user are.	1.3 Computer Networks, Connections and Protocols <u>Knowledge</u> What are the different types of network? What factors can affect the performance of networks? What is the difference between types of network? What hardware can I use to make a network? What is the internet? What is a topology? What is encryption? Is a wired network better than a wireless network? What are protocols and layers? <u>Key Skills</u> -Justify choices of computer hardware to create a basic computer network - Compare the differences between LANs and WANs and explain how the internet works - Compare hosting sites for websites and advise pros and cons between a LAN and WAN network.	1.1 Systems Architecture <u>Knowledge</u> What is the purpose of the CPU? What are its functions? What effects the CPU performance of a machine? What is an embedded system? <u>Key Skills</u> -Carry out the fetch – execute cycle and understand the role and purpose of each register	2.3 Producing Robust Programs <u>Knowledge</u> What is defensive design? How can I use input validation techniques? How are large programs maintained? How are programs tested? What is the difference between a syntax error and a logic error? What test data should I use? <u>Key Skills</u> - Justify and explain why testing is different during development of a program and at the end of production - Create/complete a test plan. - Design input validation and simple authentication	Year 11 Revision And Exam	