Computing

KS3

Year 7		Year 8		Year 9	
HT1: Click or tap here to enter text.	**HT2: Transition** This unit of work uses innovative approaches to encourage pupils to build relationships with their peers through the use of technology. It is designed to support Ribblesdale's transition process and establish a code of conduct for the use of 21st century technology, ensuring pupils become digitally capable and aware citizens.	**HT1: Microsoft Skills** This unit will ensure that pupils understand and know how to confidently use the more advanced features of Microsoft Word, Microsoft Excel and Microsoft PowerPoint, whilst further embedding the basic skills previously learned.	**HT2: Computing Concepts** This unit will ensure that pupils understand how data is stored\executed and recognise that digital data, no matter the format, is represented in binary. They will use bit patterns to represent different types of media and perform different operations such as binary addition.	**HT1: App Lab** This unit considers how mobile devices are impacting society. Pupils learn about the product lifecycle and design and create an entertainment application (App). To do so, pupils must combine creative design and programming knowledge as well as developing an understanding of how target audience affects design.	**HT2: Encryption** This unit of work enables pupils to understand the greater issues around data security, and explore and investigate different security ciphers. Pupils will implement a range of ciphers from symbolic ciphers, to substitution ciphers, to more complex mathematical ciphers. Pupils will also investigate Alan Turing, and his contribution to Cryptography and Computer Science.
HT3: One2One This unit of work is designed to develop the skills needed to succeed in a technology-driven society. Pupils explore ways in which the effective use of technology can support a journey of lifelong learning.	**HT4: Computational Thinking** Pupils work to develop problem-solving and computational thinking skills. The unit introduces the concepts of decomposition, abstraction and pattern recognition. Pupils will be introduced to pseudocode, allowing them to analyse and create algorithms to break down computational problems.	**HT3: Modelling and AI** This unit encourages pupils to explore what AI is, and to create different models of an intelligent computer program, whilst exploring the morals and ethics of computer-controlled environments.	**HT4: Networking** This unit focuses on how the networking of devices has impacted our lives. Pupils learn about the hardware and software components needed to transmit data over computer systems. They will investigate what the internet is and create a static webpage using HTML.	**HT3: Web Development** In this unit, pupils will learn how to create and share content on their own web pages. After deciding the content they would like to share with the world, they will learn how to structure and style their pages using HTML. Pupils will also practise valuable programming skills such as: debugging, using resources, and teamwork.	**HT4: Creative Projects** This unit of work encourages pupils to develop a user interface for a specific purpose and target audience. They will need to consider design principles and user requirements in the development of the product. Pupils will need to combine different types of multimedia to achieve an effective product.
HT5: Basic Programming This unit of work introduces pupils to the basic principles of coding. Pupils use a drag and drop interface and develop working algorithms to solve a variety of computational problems. The development of programming knowledge helps young people better understand the world around them.	**HT6: Using Graphical Elements** In this unit, pupils develop a multimedia product by combining a variety of different assets. Pupils plan, design and create a product that is suitable for a specific target audience, justifying their approach and evaluating the outcome. Pupils will need to understand and abide by the Copyright, Designs and Patent Act.	**HT5: Python Programming Basics** This unit builds upon pupils' programming knowledge and introduces a textual based language. Pupils will be required to use a range of operators and expressions and apply them in the context of program control. Pupils will also need to solve a variety of computational problems; making appropriate use of data structures.	**HT6: Advanced Python** Pupils build upon the textual based programming knowledge they have acquired, developing critical thinking and problem-solving skills. Pupils use nested IF statements and different types of iteration to create solutions for computation problems, learning the difference between functions and procedures.	**HT5:** Rotation with Technology, Art and Music.	**HT6:** Rotation with Technology, Art and Music.

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Computing

KS4 Computer Science

Year 10		Year 11	
HT1: Binary and Hexadecimal Pupils will need to use the binary system to perform different mathematical calculations and convert between binary, denary, hex. Binary Representations: Pupils will understand how different types of media are represented and explain how these files can be compressed justifying which approach would be best.	**HT2: Programming Languages** Pupils will need to explain the difference between assembly, high and low-level languages and how they are interpreted using a compiler or an interpreter. Computer Systems: Hardware – Pupils will need to describe the structure of the CPU and its different components, understanding the Fetch Decode Execute Cycle (FDE).	**HT1: Problem Solving and Robust Programming** Pupils will need to use computational thinking skills to create different algorithms to solve problems that they have analysed. They will use top-down and bottom-up approaches to create structures programs using procedures and functions. Pupils will use the development life cycle to analyse problems and design and implement different solutions, testing the outcomes.	**HT2: Algorithms** Pupils will understand how algorithms are developed using the three basic programming constructs (Sequence, Iteration, Selection) and how they are combined to solve complex problems and display them using Flowcharts and Pseudocode.
HT3: Computer Systems Software – Pupils will understand that systems software manages all the actions of the computer and helps users to organise their programs. Networks – Pupils will need to understand the impact that computer networks have on our lives, describing the different types of topologies. They will be introduced to the OSI Model and need to explain the role the different layers play in transmitting data.	**HT4: System Security** Pupils will explore the different strategies that criminals use to attack networks and how these risks can be prevented and combatted. Pupils will explain how different network policies and laws have been introduced to secure our data as well as understanding the difference between black and white hacks.	**HT3: Searching and Sorting Algorithms** Pupils will need to describe the main types of searching and sorting algorithms and use them to select and sort data. Input and Output: Pupils will describe ways in which data can be inputted and justify the most effective approach. Pupils will create a program that uses a variety of input and output methods to solve a problem.	**HT4: Data Types and Structures** Pupils will need to be able to explain and use a variety of different data types. They will need to carry out various manipulations such as finding the length of and slicing and concatenating 'string' data types. Pupils will need to create different programs using a variety of data types and structures (arrays) to solve computational problems.
HT5: Boolean Logic Pupils will be using Boolean operators to create a logic circuit that returns a true or false value, they will investigate how truth tables are used to show all the possible results of the sub statements. Pupils will be introduced to Boolean algebra and the different expressions used. Pupils will investigate Assemblers, Compilers and Interpreters as well as understanding the features of an IDE.	**HT6: Ethical, Legal, Cultural and Environmental Concerns** Pupils will investigate and discuss the following issues in relation to the impact of computer science; environmental, ethical, legal and cultural. Pupils will be introduced to the legislation relevant to computer science and how this impacts individuals and business around the world.	**HT5: Iteration and Defensive Design** Pupils will understand the difference between conditional and count controlled loops and justify the reasons for use. They will design algorithms using iteration to solve problems and use trace tables to identify and correct coding errors.	**HT6:** Summer examinations taking place.

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Computing

KS4 Digital Information Technology BTEC

Year 10		Year 11	
HT1: Exploring User Interface Design Principles Learning Aim A: Pupils will investigate user interface design for individuals and organisations. Pupils will need to consider different factors to ensure the chosen user interface is suitable, and investigate interaction and user accessibility requirements.	**HT2: 1LA** Learning Aim B and Learning Aim C: Pupils will use different project planning techniques to plan and design a User Interface for an organisation. They will learn the importance of using an agreed set of procedures when implanting a project. Pupils will complete a practice assignment in preparation for next term.	**HT1: Learning Aim C & External Assignment: Component 2 LABC** Pupils will need to consider how their dashboard can be used to help draw meaningful and accurate conclusions from the information presented.	**HT2: Learning Aim C & External Assignment: Component 2 LABC.** Pupils will continue working on their Component 2 External Assessment. They will be given a set brief from the Exam Board, and will work their way through the tasks using their notes and knowledge they have gained in the previous half-term.
HT3: External Assignment: Component 1 LA,B,C This term, pupils will complete their Component 1 External Assessment. They will be given a set brief from the Exam Board and will work their way through the tasks using their notes and knowledge they have gained in the previous half-term.	**HT4: External Assignment: Component 1 LA,B,C** This term, pupils will complete their Component 1 External Assessment. They will be given a set brief from the Exam Board and will work their way through the tasks using their notes and knowledge they have gained in the previous half-term.	**HT3: Component 3 – Effective Digital Working Practices** Topic A: Modern Technologies Pupils will be introduced to technologies that are used to help organisations exchange information, communicate and complete work related tasks Topic B: Cyber Security Pupils will learn the combination of policies, procedures, technologies and the actions of individuals to protect from threats both internal and external.	**HT4: Ethical, Legal, Cultural and Environmental Concerns** Topic C: The wider implications of digital systems Pupils will need to understand how organisations manage their data lawfully and use technologies in the right way. Topic D: Planning and communication in digital systems Pupils will learn how organisations monitor the technology that they use. Some organisations will create lists, others create diagrams that show how technologies are connected
HT5: Component 2 - Collecting, Presenting and Interpreting Data Learning Aim A: Pupils will investigate the role and impact of using data on individuals and organisations. They will need to comprehend the difference between data and information and how they can convert raw data into useful information.	**HT6: Component 2** Learning Aim B: Pupils will need to evaluate real-life data dashboards; identifying their main features and the types of applications they are used for. Pupils then will take this knowledge and create their own, whilst learning the most appropriate functions in Microsoft Excel.	**HT5: Ethical, Legal, Cultural and Environmental Concerns** Topic D: Planning and communication in digital systems and Revision. Pupils will learn how organisations monitor the technology that they use. Some organisations will create lists, others create diagrams that show how technologies are connected, and Revision.	**HT6:** Course Complete - Early May normal Exam Date. If later and in HT6, Revision ready for the Exam.

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Media

KS4 Creative Media BTEC

Year 10		Year 11	
HT1: Component 1 LOA Pupils will develop their understanding of the relationship between media products, their audiences, and purpose. Pupils will explore and investigate media products from the following sectors: audio/moving image, print, and interactive.	**HT2: Component 1 LOB and LOC** Pupils will develop their understanding of how media products combine genre, narrative and representation to create meaning for their audiences. Pupils will also deconstruct media products to examine how media production techniques are combined in media products to create specific effects and engage audiences.	**HT1: Component 2 LOC and External PSA Time** Pupils will complete the PSA for Component 2. This is a task and brief set by the exam board, and moderated in December/January of Year 11. Pupils will use this term to independently work through the tasks and produce documentation as evidence of completing the tasks.	**HT2: Component 2 LOC and External PSA Time** Pupils will complete the PSA for Component 2. This is a task and brief set by the exam board, and moderated in December/January of Year 11. Pupils will use this term to independently work through the tasks and produce documentation as evidence of completing the tasks.
HT3: External PSA Time Component 1 Pupils will complete the PSA for Component 1. This is a task and brief set by the exam board, and moderated in summer of Year 10. Pupils will use this term to independently work through the tasks and produce documentation as evidence of completing the tasks.	**HT4: External PSA Time Component 1** Pupils will complete the PSA for Component 1. This is a task and brief set by the exam board, and moderated in summer of Year 10. Pupils will use this term to independently work through the tasks and produce documentation as evidence of completing the tasks.	**HT3: Component 3 LOA** This component is the synoptic assessment, and will cover skills from both units of study from Year 10 and 11. LOA will enable pupils to explore how to create and develop ideas in response to a given brief.	**HT4: Component 3 LOB** This component is the synoptic assessment, and will cover skills from both units of study from Year 10 and 11. LOB will enable pupils to develop planning materials in response to a brief, and give pupils an opportunity to respond to time management and planning techniques.
HT5: Component 2 LOA Pupils will explore Media pre-production processes, skills and techniques. They will generate and develop techniques in response to a creative brief.	**HT6: Component 2 LOB and LOC** Pupils will apply Media production and post-production processes and practices. Develop their skills and techniques and will also review their progress and development, and apply testing processes to ensure work produced is accurate.	**HT5: Component 3 LOC and External Examination** This component is the synoptic assessment, and will cover skills from both units of study from Year 10 and 11. LOC will enable pupils to apply media production skills, processes and technicalities in response to a brief. The component will be assessed in Summer of Year 11, and will be marked by the exam board.	**HT6:** Summer examinations taking place.

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