

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 21 st century technology, ensuring pupils become digitally capable and aware citizens.	HT1: 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.	HT2: Computing Concepts – This unit will ensure that pupils understand how data is stored\executed and recognise that digital data, no matter of 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: 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.	HT2: Graphical Interfaces: This unit considers how mobile devices are impacting upon society. Pupils learn about the product life cycle 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.
HT 3: One2One: This unit of work is designed to develop the skills needed to succeed in a technology-driven society. The effective use of technology can support a journey of lifelong learning for pupils.	HT 4: 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.	HT 3: Modelling: This unit encourages pupils to use creative design to develop a real-world model. Pupils will ask "What If?" questions as they plan, implement, and develop projects are based on personal circumstances.	HT 4: Networking: This unit focuses on how the networking of devices has impacted upon 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.	HT 3: Computational Project: This unit encourages pupils to use practical programming skills to develop a solution for a real-world computational problem. They will need to plan, design and create an algorithm using a textual based language and present their solution in a suitable format, justifying their approach.	HT 4: 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.
HT 5: 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.	HT 6: ELCE: This unit of work considers the impact of technology on our world, focusing on the physical and moral implications of its introduction. Pupils will investigate and discuss a range of ethical topics to explore how the introduction of computer science has and will continue to shape our society.	HT 5: Python Programming: 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.	HT 6: System Security: This unit of work addresses cyber security issues. Pupils investigate how criminals find vulnerabilities in systems with the intent to perform criminal activities and learn how having an in-depth knowledge of different security threats can prevent it happening.	HT 5: Rotation with Technology, Art and Music	HT 6: Rotation with Technology, Art and Music

Computing

KS4 Computer Science

Year 10		Year 11	
HT1: Algorithms: Pupils develop understanding of how algorithms are developed. Pupils use the three basic programming constructs (sequence, iteration, selection) and combine them to solve complex problems, displaying them using flowcharts and pseudocode.	HT2: Iteration: Pupils learn about the difference between conditional and count controlled loops and justify the reasons for use. Pupils then design algorithms using iteration to solve problems and use trace tables to identify and correct coding errors.	HT1: Understanding Binary and Hexadecimal / Binary Representations: Pupils learn about the binary system to perform mathematical calculations and convert between binary, denary, and hex. Pupils also explore representations and possible compressions of types of media, justifying which approach would be best.	HT2: Programming Languages / Computer Systems: Pupils learn about the difference between assembly, high and low-level languages and how they are interpreted using a compiler or an interpreter. Pupils learn about the structure of the CPU, the Fetch Decode Execute Cycle (FDE) and assembly, high and low-level languages and their interpretation.
HT 3: Boolean Logic: Pupils use Boolean operators to create a logic circuit that returns a true or false value, investigating how truth tables are used to show all the possible results of the sub statements. Pupils will also be introduced to Boolean algebra and the different expressions used.	HT 4: Data types and Structures: Pupils learn to explain and use a variety of different data types. During the unit pupils carry out various manipulations such as finding the length of, slicing and concatenating 'string' data types. Pupils create different programs using a variety of data types and structures (arrays) to solve computational problems.	HT 3: Computer Systems Software & Networks: Pupils develop understanding of systems software, its management of the actions of the computer, and how it helps users to organise their programs. Pupils evaluate the impact that computer networks have on our lives, exploring different topologies, and are introduced to the OSI Model. Pupils also learn the role of the different layers play in transmitting data.	HT 4: System Security: Pupils learn to explain the different strategies that criminals use to attack networks and how these risks can be prevented and combatted. Pupils will explore the different network policies and laws which have been introduced to secure our data.
HT 5: Searching and Sorting Algorithms / Input & Output: Pupils learn to describe the main types of searching and sorting algorithms and use them to select and sort data. Pupils also develop understanding of the ways in which data can be inputted and justify the most effective approach, then apply this learning to create a program that uses a variety of input and output methods to solve a problem.	HT 6: Problem Solving: Pupils use computational thinking to create algorithms to solve problems. After exploring top-down and bottom-up approaches to create structures programs using procedures and functions, pupils use the development Life cycle to design solutions and test the outcomes.	HT 5: Ethical, Legal, Cultural and Environmental Concerns: Pupils investigate and discuss environmental, ethical, legal and cultural issues in relation to their impact on computer science. Pupils are introduced to the legislation relevant to computer science and how this impacts individuals and business around the world.	HT 6:

Notes

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Computing

KS4 Digital Information Technology BTEC

Year 10		Year 11	
<p>HT1: Component 1: Exploring User Interface Design Principles C1 Learning Aim A requires pupils to investigate user interface design for individuals and organisations, considering a range of factors to ensure the chosen user interface is suitable.</p>	<p>HT2: The first four weeks of this half term are given over to the C1 Learning Aim A assessment window. After this, pupils commence Learning Aim B, which requires pupils to use different project planning techniques to plan and design a user interface for an organisation. Through this, pupils learn the importance of using an agreed set of procedures when implanting a project.</p>	<p>HT1: The first four weeks of this half term are given over to the C2 Learning Aim B assessment window, after which pupils commence work on Learning Aim C (see HT2)</p>	<p>HT2: Learning Aim C Pupils consider how their dashboard can be used to help them draw meaningful and accurate conclusions from the information presented.</p>
<p>HT 3: The first four weeks of this half term are given over to the C1 Learning Aim B assessment window. In Learning Aim C, pupils are required to create their own user interface for a specific purpose. Pupils must consider how this user interface should be used to input data and the data output back to the user. Pupils must then review their project based on specific success criteria.</p>	<p>HT 4: This unit is dedicated to completion of the C1 Learning Aim C assessment. Assessment window 5 weeks.</p>	<p>HT 3: The first four weeks of this half term are given over to the C2 Learning Aim C assessment window. After this, pupils move on to Component 3: Effective Digital Working Practices. This Component comprises three topics, the first of these is Topic A: Modern Technologies, in which pupils are introduced to technologies that are used to help organisations exchange information, communicate and complete work related tasks</p>	<p>HT 4: Topic B: Cyber Security Pupils learn the combination of policies, procedures, technologies and the actions of individuals which provide protection from internal and external threats. Topic C: The wider implications of digital systems Pupils develop understanding of how organisations manage their data lawfully and use technologies in the right way.</p>
<p>HT 5: Component 2: Collecting, Presenting and Interpreting Data In C2 Learning Aim A, pupils investigate the roll and impact of data use on individuals and organisations. Pupils develop understanding of the difference between data and information and how they can change or convert raw data in useful information.</p>	<p>HT 6: The first four weeks of this half term are given over to C2 Learning Aim A assessment window, after which pupils begin work on Learning Aim B. During this unit, pupils evaluate real life data dashboards, identifying their main features and the types of applications they are used for. Pupil then use this knowledge to create their own dashboard.</p>	<p>HT 5: Ethical, Legal, Cultural and Environmental Concerns – Topic D: Planning and communication in digital systems Pupils learn how organisations monitor the technology that they use. Some organisations will create lists, others create diagrams that show how technologies are connected.</p>	<p>HT 6: Click or tap here to enter text.</p>

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