



The Brades Lodge

# Long Term Planning for: ICT

	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>KS4</u>
<u>Autumn 1</u>	<b>Clear Messaging In Digital Media</b>	<b>Computing Systems</b>	<b>Cybersecurity</b>	<b>Entry Level – Computer Hardware &amp; Software</b>
<u>Intent –</u>	Provide basic skills for school life across all curriculums	Introduce students to the inner workings of physical computers including the use of software, hardware and artificial intelligence	Give the students a basic introduction to keeping themselves online and identifying common threats they may encounter online	Provide students with the knowledge of computer hardware and software in order to achieve an entry level qualification in Computer Science
<u>Implementation –</u>	Series of individualised lessons/activities that will provide the basic framework for knowledge building e.g. adding folders to a network/ saving and printing documents	Series of individualised lessons/activities that will provide the opportunity to delve into the inner workings of computers and identifying the difference between hardware and software	Series of individualised lessons/activities and student led research into the different types of online threats such as malware, spyware and worms. We also cover real life effects of attacks and how these cyberattacks can be prevented	A series of individualised lessons, activities and student research into the hardware components that make computers function will be delivered. We will also cover Software and the different types available to use, their purpose and also the advantages and disadvantages of using them



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<p><u>Impact –</u></p>	<p>By the end of this unit students should be able to demonstrate basic computing skills that can be used across the curriculum such as accessing files, using search engines to gather information and using appropriate application software</p>	<p>Through the use of summative assessments students will be required to identify the common hardware components such as hard drive, RAM and CPU as well as common software applications such as proprietary and open source software</p>	<p>Make students aware of the dangers online and how they can identify them. Also, to provide them with ways of preventing and reporting them when encountered</p>	<p>Provide students with the knowledge required in order to achieve in their Entry Level Computer Science qualification</p>
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<u>Autumn 2</u>	<b>Modelling Data Using Spreadsheets</b>	<b>Networks From Semaphores To The Internet</b>	<b>Swift: Learn To Code 3</b>	<b>Entry Level – Computer Memory &amp; Storage and Moral, Legal, Cultural and Environmental Concerns</b>
<u>Intent –</u>	Give students a basic introduction to the use of Microsoft Excel which is used widely across the school curriculum and leading into job prospects	Provide students with the knowledge of networks and how data is transmitted across a variety of platforms (e.g. internet, computers, networks) and the various different communication protocols that we must adhere to	Build on the knowledge students have learnt in the previous “Learn To Code” units and give students access to a wide variety of coding languages	Provide students with the knowledge of computer memory & storage and moral, legal, cultural and environmental concerns in order to achieve an entry level qualification in Computer Science
<u>Implementation –</u>	Through a series of projects students learn how to input, format and sort/filter data in a way that will give them the skills to access higher learning	Series of individualised lessons/activities that allow students to explore the framework of networks and identify how data is transmitted across them	Through a series of individualised lessons, students will learn aspects of coding and apply them using practical activities	A series of individualised lessons, activities and research tasks will allow students to discover the main components of computer memory and how they work together to function along with the legislation that protects everyone from computer misuse
<u>Impact –</u>	Students will have learnt skills that will be transferrable across the curriculum (e.g. Maths/Science) by constructing spreadsheets	Students will be able to explain how networks are used to allow communication and also access to the world	Students will be able to use problem solving skills to complete activities that they may face in real life coding scenarios	Provide students with the knowledge required in order to achieve in their Entry Level Computer Science qualification



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	that represent data and provide an outcome	wide web through the use of servers and data packets		
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<u>Spring 1</u>	<b>Computing Systems – Communication &amp; Collaboration</b>	<b>Physical Programming With Micro:Bit</b>	<b>Introduction To Python Programming</b>	<b>Entry Level – Computational Logic &amp; Algorithms</b>
<u>Intent</u>	Learners will look at how data is transferred over the internet and how the internet facilitates online communication and collaboration	To refresh and apply previous programming knowledge to practical scenarios using a micro:bit device	Introduce learners to text based programming using Python	Provide students with the knowledge of computational logic and algorithms in order to achieve an entry level qualification in Computer Science
<u>Implementation</u>	A series of individualised lessons/activities that will focus on that will allow students to share projects online and evaluate different methods of communication	A series of individualised lessons and activities that allow students to apply the theory of programming to practical scenarios using the micro:bit device	Using a range of lessons and activities, students will start with simple programs involving inputs/outputs before moving onto arithmetic operations, selection and iterations	A series of individualised lessons, activities and student led research will cover the topics of computational thinking and algorithms which includes Boolean logic, arithmetic operators and computational thinking
<u>Impact</u>	Students will learn how to collaborate and communicate appropriately online by considering what should and what shouldn't be shared	Students will be able to apply their previous knowledge of programming to solve scenarios using the micro:bit. This will allow them to	Students will be able to demonstrate the basics of using a text based form of coding with	Provide students with the knowledge required in order to achieve in their Entry Level Computer Science qualification



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	online. This will also provide them with the basic knowledge of networks which will be built upon in Year 8	strengthen their knowledge of programming techniques such as variables, sequences and other techniques	Python which will lead into the next unit of broadening their knowledge of text based programming and prepare them for KS4	
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	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>KS4</u>
<u>Spring 2</u>	<b>Programming Essentials in Scratch – Part I</b>		<b>Python Programming With Sequences Of Data</b>	<b>Entry Level – Programming Techniques &amp; Data Representation</b>
<u>Intent</u>	Introduce students to a form of coding and build their confidence and knowledge of the key programming constructs	<b>Swift: Learn To Code 1 &amp; 2</b>	This unit will introduce students to how data can be represented and processed in sequences, such as lists and strings	Provide students with the knowledge of programming techniques and data representation in order to achieve an entry level qualification in Computer Science
<u>Implementation</u>	Using a series of lessons and activities, students will demonstrate their ability to produce simple code and apply problem solving skills to resolve scenarios		Using a series of lessons and activities, students will cover a spectrum of operations on sequences of data, that range from accessing an individual element to manipulating an entire sequence	Using a series of individualised lessons, activities and student led research we will cover topics that include variables, selection, iterations, operators and units of memory
<u>Impact</u>	Students will gain a basic understanding of programming which will include the ability to create variables, sequences and iterations which can then be		Students will be able to demonstrate their understanding of Python by experimenting with sequences of data	Provide students with the knowledge required in order to achieve in their Entry Level Computer Science qualification



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	used as a platform to build upon in subsequent units			
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<u>Summer 1</u>	<b>Programming Essentials in Scratch – Part II</b>		<b>Applying Programming Skills With Physical Computing</b>	<b>Entry Level – Programming Project</b>
<u>Intent</u>	Build upon the basic framework of programming students learnt in the previous topic which introduced students to Scratch	Highlight key coding concepts while demonstrating how coding is a way of thinking that can be applied to other subjects and everyday life. In part 2, students will then build upon their knowledge of Swift by learning more ways to use code to interact with their characters and world	Apply and enhance the students programming skills using the micro:bit and write simple programs that use python code	
<u>Implementation</u>	Using a series of lessons and activities, students will demonstrate their ability to produce simple code and apply problem solving skills to resolve scenarios	Using a series of lessons, activities and reflection activities, students will be required to demonstrate their ability to code and complete a variety of tasks to meet lesson objectives	Using a series of lessons/activities, student will demonstrate their knowledge of python coding in combination with using the micro:bit to code, flash and test programs	
<u>Impact</u>	Learners will be able to demonstrate the ability to	Students will have an improved understanding of	Students will be able to combine what they have	



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	create their own subroutines within scratch and build upon their problem solving skills by working through a larger project at the end of the unit	coding concepts and have developed a set of coding skills to build upon their basic programming vocabulary learnt in previous units	learnt in the previous topics along with the current topic and create text based programs on physical devices	
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<u>Summer 2</u>	<b>Developing For The Web (HTML)</b>	<b>Binary Representations</b>	<b>Data Science</b>	
<u>Intent</u>	Introduce students to another form of coding that they can use at a basic level to create simple webpages	Gradually introduce students to binary numbers and how they can be used to represent text and numbers	Delve into Data Science and identify how we can visualise data to identify patterns and trends in order to gain insights	Apply content covered in the Entry Level qualification and create a coding project that meets the qualification specification
<u>Implementation</u>	Using a series of individualised lessons/activities, students will demonstrate their understanding of the basic features of webpages and how they can create their own webpages that could potentially be hosted on the web	Using a series of individualised lessons/activities, students will demonstrate their understanding of binary numbers by linking them to practical applications and problems that the students may be familiar with	Through the use of a series of individualised lessons/activities, students will build their knowledge of data science and how it can be used to identify trends in data	Students will use time in lesson to create their own coding project that meets the qualification specification. This will require them to plan, write, test and evaluate a simple coded program using a coding language of their choice. This can be a text based language such as Python or a drag and drop language such as scratch
<u>Impact</u>	This unit will provide students with a basic understanding of static webpages and CSS. It will also introduce them to their form of text based programming that will lay the	The purpose of this unit is to introduce students to binary numbers which we will cover more in depth when the students reach KS4 and start	Students will build the confidence to analyse data and conduct their own research topic that can be visualised in order	Provide students with the knowledge required in order to achieve in their Entry Level Computer Science qualification



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	foundations for future text based programming units	working towards their qualification	to identify trends and gain insights	
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