Saint Michael's CE High School
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KS3 Information Computing

YEAR	TRINITY 2	MICHAELMAS 1	MICHAELMAS 2	LENT 1	LENT 2	TRINITY 1
7		**Digital Skills** During this unit pupils will investigate how to use the school network responsibly and efficiently. Pupils will develop core skills associated with desktop computer use including how to present text and images with good effect.	**Collaborating Online Respectfully** In this unit pupils will be introduced to the network and how to use it safely. Pupils will consider what makes an effective password and will investigate safe and appropriate use of the internet and social media.	**From Semaphores To The Internet** In this unit pupils will explore the growth and use of computer networks including the benefits of networking and how data is transmitted across a network using protocols	**Programming Essentials Part 1** This unit allows pupils to develop their programming skills using a block based programming language. The main programming concepts covered in this unit are sequencing, variables, selection, and count controlled iteration	**Programming Essentials Part 2** Pupils will continue their programming journey by creating their own subroutines, developing their understanding of decomposition. Pupils will learn how to create lists before independently applying their skills to solve a given problem.
8	**Modelling Data: Spreadsheets** Pupils will be introduced to spreadsheet modelling in this unit of work. They will investigate the use of formula to analyse and manipulate data, visualising the results through the use of charts.	**Computing Systems** Pupils will develop an understanding of how a computer works in this unit, from programs and the operating system, to the physical components that store and execute these programs. Pupils will also be introduced to the concept of binary representation.	**Data Representation** ***(Binary, Binary Addition, Representing Images)*** In this unit of work pupils will develop their understanding of binary representation and how computers use binary to perform tasks and display text, numbers and images.	**Introduction To Python** Pupils will develop their knowledge of programming through the introduction of text based languages. Pupils will focus on input and output, arithmetic, random, selection and iteration.	**Further Data Modelling** During this unit of work pupils will further their knowledge and understanding of spreadsheet modelling. Learning will focus on the use of conditional formatting, charts, drop down boxes, count, VLOOKUPs and IF statements.	**Developing For The Web** During this unit of work pupils will learn how to build basic websites using HTML coding. Pupils will go onto to develop websites using CSS style sheets considering how design impacts on the user experience. Using knowledge sought from history lessons about the Holocaust, pupils will design and build a web page prototype to demonstrate their understanding of the Holocaust.
9	**Effective Interface Design** During this unit pupils will develop their understanding of how to manipulate images for use in different publications. Pupils will develop their understanding of design principles and how they can be applied effectively to suit the requirements of all users.	**Spreadsheets & Data Science** Pupils will investigate the use of big data in this unit, how it is collected and the benefits and drawbacks of different data collection methods. Learners will be exposed to both global and local data sets and gain an understanding of how visualising data can help with the process of identifying patterns and trends.	**Computational Thinking & Python** In this unit pupils will build on their knowledge of year 7 and 8 programming by investigating how data can be represented and processed in sequences, such as lists and strings	**Data Handling** During this unit of work pupils will build on their knowledge and understanding of data. Pupils will investigate the use of databases, learning how to create a database table to store records and fields. Pupils will also consider the use of primary keys and other methods of validation to improve data reliability. Pupils will also develop an understanding of database queries and database forms. .	**Cybersecurity** Pupils will develop an understanding of what threats our data might be exposed to, including malware, social engineering and hacking. Pupils will investigate the impact a cyber-attack can have on an individual and how we can minimise the risk of such attacks.	**Digital Wellbeing** Pupils will develop their knowledge of internet safety within this unit, pupils will investigate the use of image editing and the impact this and the over use of social media and the internet can have on emotional wellbeing.

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