Parkside House School Key Stage 3 ICT and Computing Scheme of Work 2020 Year 3

Module	Theme	Learning Objectives	Coverage
Term 1: E-Safety and Digital Literacy:			
Disinformation and Bias Cyberbullying, Grooming and Sexting	The first two E-Safety units are part of the Teach ICT Online Safety course. Due to the sensitive nature of some of the topics alternative activities can be provided.	• The cyberbullying and grooming tasks will let pupils understand the effects that cyberbullying can have on somebody else. • Help pupils know what to do if they are cyberbullied i.e. telling a trusted adult or contacting Childline • Pupils will be encouraged to consider how their own behaviours might affect someone else. • They will be helped to form clear opinions about the effect of cyberbullying through discussion. • Pupils will demonstrate that their understanding and ability to offer suggestions to help a person being bullied by creating a guide. • Students will also understand how to recognise online grooming and know what they need to do to reduce the risks of becoming a victim of online grooming. • Students will then learn what is meant by sexting, the possible consequences and where to find help and advice, with the aim that they have been made aware of the dangers of sexting • Pupils will be given an understanding of the social, ethical and legal issues related to sexting.	1. Hardware, software components, computer systems and networks 2. Use technology safely
Disinformation and Bias: Fake News	This unit links to work in Entry Level English where bias in the media is examined.	• The unit begins with an investigation of reliable and unreliable sources of information comparing BBC News to individual vloggers comparing reports for and possible reasons for bias, political stance, ideology or commercial sponsorship (paid reviews) through internet searching.	1. Hardware, software components, computer systems and networks

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		• The pupils are made aware of the dangers of conspiracy theory web sites and how advertisements and posts are targeted through social media using the Cambridge Analytics/Facebook case study. • Pupils are then given a project that uses Word Processing and Image manipulation skills developed in Year 2 to create a realistic Fake News article. • The article can be in web or traditional newspaper front cover style. • Some pupils may make use of free online web site/app creators to create an **unpublished** web site or mobile application.	(Cloud Storage and Online working) 2. Design, use and evaluate computational abstractions 3. Use 2 or more programming languages (BLOCKLY/JAVA) 4. Develop application skills in MS Office and/or a similar package.
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Term 2 Logic, Planning and Programming			
Boolean logic		• The students will study how Boolean logic is used to create structures that allow computers to solve problems using simple binary forms. • The students will be reintroduced to binary from the year 1 programming course leading to practical exercise that describe the use of AND/OR and NOT gates, • Truth Tables and how binary can be used to set conditional values. Students will have the opportunity to practice these skills online at Teach ICT, in game with the Minecraft trial and the academo.org online logic simulator.	1. Design, use and evaluate computational abstractions 2. Use 2 or more programming languages 3. Develop application skills in MS Office and/or a similar package.

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Planning Using Flowcharts	Pupils will extend their knowledge of algorithms from the year 1 programming course where they were introduced to *computational thinking*.	• Pupils will learn the using standard Flowchart conventions to plan a series of instruction sets that solve problems from the steps needed to make a cup of tea to creating a branching story or flowchart map. • Pupils will be given examples including some fun flowcharts from https://www.edrawsoft.com/fun-flowchart.html i.e. "Should I Do My Laundry". • Pupils will be made aware that their Flowcharts can constitute an algorithm that describes a real world problem in logical computational terms. • They will practice the computational thinking process to *decompose* a problem into separate elements. • Some pupils will be able to describe these sub-elements as *procedures* and may define them in *pseudocode*. • Pupils will be re-introduced to the idea of a text-based programming by converting part or all of a flowcharts into a series of written commands in pseudocode Python programming unit.	1. Design, use and evaluate computational abstractions (Basic introduction of key concepts of *computational thinking* and *pseudocode*) 2. Understand several key algorithms (num count and conditional routing)
Handling Numbers in Python		This unit introduces students to the common mathematical operators used in programming and builds on the skills learnt in the introduction to Python in the previous year. They learn how to set up numerical variables and use comparison operators. They learn to work with integers, floats and random numbers. By the end of the project they may have written the code for a simple adventure game using the branching structures and logic studied in the previous two units.	1. Hardware, software components, computer systems and networks 2. Understand how instructions are stored and executed within a computer system 3.
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Term 3			
Business and Data Modelling: Pizzorama .		This unit is an introduction to using a spreadsheet to help a new owner run a pizza shop. The unit builds from simple cell referencing with a predefined sheet, through some basic formulas that familiarise pupils with the syntax and format of Excel's calculations. The unit uses a context most pupils are familiar with and is combined with small skill based exercises (i.e. a pocket money spreadsheet) and instructions to assess progress and competence in what can be a challenging area. At the end of the unit pupils can either modify and enhance the given examples or research their own shop based spreadsheet. Some pupils will progress to representing their data visually using Excel's Chart function	
			1. Design, use and evaluate computational abstractions 2. Use 2 or more programming languages 3. Creative projects that involve selecting, using and combining multiple applications 4. Develop application skills in MS Office and/or a similar package
End of Year Assessment		• The students will be given an end of year assessment based on the topics covered this year. • An assessment of progress and performance in class work and projects will made for each student.	

		• These assessments will be combined to provide an overall assessment for the year and be reported to parents/carers via each student's annual report.	