Co-op Academy Leeds Year 8: Computing - Long Term Plan 2024-25

All lessons will follow the Co-op Academy Lesson Journey and include a (retrieval) Do Now, Lesson Intentions, Success Criteria, Explicit Instruction, Quality Time/Practice, Review

ROLLOVER					
Week	37	38	39	40	41
W/C Date	24-Jun 23	01-Jul 23	08-Jul 23	15-Jul 23	22-Jul 23
Specification	Computer Science: Creating Spiderman's Spider Suit				
Topic	Python: Turtle Graphics				
	Algorithm	Sequence	Selection	Iteration	Trace Tables
Key Objectives	Identify flow-diagram shapes for an algorithm	plan a sequence of instructions for a program in python turtle graphics	plan selection in set of instructions using Boolean data types and IF, THEN, and ELSE IF statements	plan iteration in a set of instructions using FOR – NEXT; REPEAT-UNTIL; WHILE-ENDWHILE	explain dry run testing using trace tables of changing variables
	create a flowchart identifying a potential algorithm	create a sequence of instructions for a program in python turtle graphics	create a selection using Boolean data types, expressions and IF and ELSE IF statements	create iteration in a set of instructions using FOR – NEXT; REPEAT-UNTIL; WHILE-ENDWHILE	trace instructions using variables, selection and repetition and predict what the result will be
	amend the flowchart and make it more efficient	correctly execute a sequence of instructions for a program in turtle graphics	correctly execute a selection using Boolean expressions and IF and ELSE IF statements	correctly execute iteration in a set of instructions using FOR – NEXT; REPEAT-UNTIL; WHILE-ENDWHILE	rectify instructions involving variables, selection and repetition and make it more efficient
Retrieval				quiz / test	DIRT

***Department* Computer Science and ICT**

Retrieval and Assessment Key

	STAR Assessment / Summative Marking
	Quizzes / Formative Assessment and Marking
	Student Voice
	Live Feedback inc Whole Class Feedback
	DIRT
	Data Capture

*****The LTP has declarative (theory) and procedural (practice) knowledge and skills embedded to develop learners holistically in Digital Literacy, Computer Science and IT. It is further saturated in a contextual narrative to give learners a real-life relatable computational thinking and problem solving perspective.*****

Key Concepts From The National Curriculum For Computing

1. Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
2. Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
3. Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
4. Are responsible, competent, confident and creative users of information and communication technology.

Year 8 key knowledge, understanding and skills to be developed:

- To know, understand and take steps to protect yourself against cyber abuse and cyber crime
- To know, understand and review hardware of a computer system
- To know and understand network vulnerabilities and security solutions
- To develop computational thinking by applying abstraction and decomposition across the problem based contextual learning
- To develop competence in the use and application of graphic manipulation tools
- To develop competence in spreadsheets and databases, and their integrated tools
- To develop python programming skills
- To develop critical reflection skills in application of artificial technology

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Week	1	2	3	4	5	6	7	8		9	10	11	12	13	14	15		
W/C Date	02-Sep	09-Sep	16-Sep	23-Sep	30-Sep	07-Oct	14-Oct	21-Oct	HALF-TERM	04-Nov	11-Nov	09-Nov	25-Nov	02-Dec	09-Dec	16-Dec		
Specification	Digital Literacy		ICT: Project Based Contextual Learning							Computer Systems: Cyber Security								
Topic	Keeping Safe Online		Spreadsheets: Mikey's Theme Park Rides							Are You Protecting Your Personal Data & Information Online?								
	Online Peer on Peer Abuse (declarative and procedural)	Cybercrime (declarative and procedural)	Design A Logo (declarative and procedural)		Design A Spreadsheet for Mikey's Theme Park (declarative and procedural)		Create A Questionnaire for Mikey's Theme Park Ride (declarative and procedural)			Online Threats and Vulnerabilities				Methods of Protection		Assessment Week		
										Data and Information	Social Engineering	Hacking	Viruses	Software and Hardware	Human			
Key Objectives	define online peer on peer abuse	define cybercrime	highlight main requirements in a client brief	create a business logo	create a table	use a formulae to calculate the SUM, AVERAGE, COUNT, MAX and MIN	design questions for table	insert all the data norms	create a graph representing the data collected	state the difference between information and data	define social engineering	define hacking	state different types of harmful software	define a firewall, anti-malware software, system and software updates	define human error	summative Assessment		
	explain the different types of online peer on peer abuse	explain the different types of cybercrime	identify success criteria	create a business logo	insert data correctly	analyse the calculated data	create a table	create a dropdown menu for each cell / question	analyse results of the questionnaire	identify ways that make information so valuable	explain methods used to trick users	explain a brute force attack	explain what to do if a computer is infected	explain user authentication and permissions	explain importance of security procedures and rules	summative Assessment		
	assess the different ways you can protect yourself against peer-on-peer abuse	assess the impact and identify the different ways you can protect yourself	identify the target audience the client brief is aimed at	create a business logo	insert all the data norms	justify the performance of the business	insert data correctly	carry out questionnaire	justify if people like it or not	discuss the consequences of data theft.	discuss ways to protect yourself against cyber	discuss the impact of a brute force attack	discuss ways to prevent computers becoming infected	discuss the benefits of added security measures	discuss impact of not adhering to rules	summative Assessment	HALF-TERM	HALF-TERM
Retrieval / Assessment / DC				quiz / mock	DIRT				STAR	DC1					quiz / mock	DIRT		

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Week	16	17	18	19	20		21	26	27	28	29	30			31
W/C Date	06-Jan	13-Jan	20-Jan	27-Jan	03-Feb		17-Feb	24-Feb	02-Mar	09-Mar	16-Mar	23-Mar			13-Apr
Specification	ICT: Project Based Contextual Learning						Computer Science Computer Systems: Hardware								Computer Science Programming
Topic	Databases: Avadani's Bubble Tea:						Looking Inside A Computer: What Is A Computer Made Up Of? (declarative)								Creating A Game In Scratch (declarative and procedural)
	Designing A Business Logo (declarative and procedural)		Plan and Design A Database (declarative and procedural)				CPU		Memory and Storage		Embedded Systems	Summative Assessment			
Key Objectives	analyse requirements to a specified client brief	create a business logo	using Draw.io create a mindmap of the type of database intended	create tables and fields	create primary keys		define a CPU	describe how the CPU performance is measured using clock speed, cache size and number of cores	outline the purpose of RAM, ROM and virtual memory	explain primary and secondary storage	define an embedded system	summative assessment and marking			list some game ideas
	identify success criteria	create a business logo	identify potential relationships between fields	assign appropriate data types	link tables together using key fields and relationships		describe how the CPU is the brain of the computer	explain how CPU performance can be affected by its characteristics	explain how RAM and ROM are similar to short- and long-term memory	explain the difference between primary and secondary storage	explain the characters of an embedded system	summative assessment and marking			create a mindmap of a potential game idea
	identify the target audience of the client brief	create a business logo	identify the data for insertion	insert the correct data	complete a test table on the database	HALF-TERM	explain the building blocks of the CPU	create your own CPU	compare RAM and ROM	discuss the advantages and disadvantages of different storage devices and storage media relating to these characteristic	compare the difference between a washing machine and a PC	summative assessment and marking	HALF-TERM	HALF-TERM	create a moodboard of a potential game idea
Retrieval / Assessment / DC				**STAR**	**DIRT**		DC 1				**quiz / test / mock**	**DIRT**			

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Week	32	33	34	35	36		40	41	42		43	44	45	46
W/C Date	20-Apr	27-Apr	04-May	11-May	18-May	HALF-TERM	01-Jun	08-Jun	10-Jun	ROLLOVER	22-Jun	01-Jul	06-Jul	13-Jul
Specification	Computer Science: Project Based Contextual Learning						Computer Science: Project Based Contextual Learning							
Topic	Programming: Creating A Game In Scratch (declarative and procedural)						Computer Systems: Ethics of Technology (declarative)							
	Designing A Game	Creating A Game					Emerging Technologies	Smart Cities	The Future is AI or Is It?					
Key Objectives	create a success criteria for the game	create characters and objects within the game	create the code for moving characters	create sound and back music	make amendments		explain the term emerging technology	define a smart city	outline the meaning of AI					
	create a flowchart / algorithm of the game idea	create a score card	create special functions of the game	create changing colours	make a second run and complete the test table		compare the different types of emerging technologies	explain the benefits of a smart city	analyse the different types of AI and their advantages and disadvantages					
	create a storyboard of a game idea	create levels within	repeat across the different levels	run the first attempt and complete test table	review the success criteria of the game		discuss the benefits and harms of emerging technology	discuss the advantages and disadvantages of a smart city	discuss the impact of AI on people and society					
Assessment		task marking					STAR	DIRT	DC3					