

Co-op Academy Leeds Year 8: Computing - Long Term Plan 2023-24

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	26-Jun 23	03-Jul 23	010-Jul 23	17-Jul 23	24-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	04-Sep	11-Sep	18-Sep	25-Sep	02-Oct	09-Oct	16-Oct	23-Oct		06-Nov	13-Nov	20-Nov	27-Nov	04-Dec	11-Dec	18-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	H A L F - T E R M	H A L L - T E R M
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	08-Jan	15-Jan	22-Jan	29-Jan	05-Feb		19-Feb	26-Feb	04-Mar	011-Mar	18-Mar	25-Mar			15-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		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			create a moodboard of a potential game idea
Retrieval / Assessment / DC				STAR	DIRT	H A L F - T E R M	DC 1				quiz / test / mock	DIRT	H A L F - T E R M	H A L F - T E R M	

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Week	32	33	34	35	36		40	41	42		43	44	45	46
W/C Date	22-Apr	29-Apr	6-May	13-May	20-May	H A L F - T E R M	3-Jun	10-Jun	17-Jun	R O L L O V E R	24-Jun	1-Jul	8-Jul	15-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					