Long Term Plan	Introduction to key computing systems, principles and algorithmic thinking			
	Learning Cycle	**Key Concepts and Themes**	**Vocabulary**	

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Year 8: Computer Science	**HT1**	Developing for the web	• HTML • CSS • How search engines work • Using hyperlinks within websites	HTML, tags, attribute, directory, render, CSS, head, body, hyperlink, crawler, spider, index, query, Connective, clause, AND, OR, NOT, quote search	• Developing for the web MCQ **PROGRESS CHECK 1**
	HT2	Representations – From clay to silicon	• What are representations • Using symbols for representations • Why computers use binary • Converting between binary and denary • The need for different units and converting between them	Sequencing, subroutines, instructions, execute, Variables, commands, execute, input, process, output, storage, tracing, Expressions, evaluate, conditions, selection, If statements, variables, sequencing, subroutines	• Representations MCQ • Vector graphics MCQ
	HT3	Media – Vector graphics	• What is a vector graphic • What are vector graphics used for • Understand that vector graphics are made up of paths. • What are the differences between bitmap and vector images	Vector, stroke, reposition, z-order, layer, handle, align, distribute, combine, union, intersection, node, freehand, icon, markup, scalable, SVG, bitmap	**PROGRESS CHECK 2**
	HT4	Mobile app development	• Decomposition of a problem • Event-driven programming • Identifying and fixing errors • Capturing and processing user input • Developing and reviewing mobile apps	Decomposition, mobile, app (application), properties , Event-driven programming, variables, sequence, workspace, properties, ids, parameters, Event handler, input, checkbox, object properties, object ids	• Mobile app development MCQ •Layers of computer systems MCQ • Python MCQ
	HT5	Layers of computer systems	• What is an embedded system • Internal computer hardware • Operating systems • Logic gates • Artificial intelligence	Machine-learning, artificial intelligence, Boolean, CPU, RAM, open-source, closed-source, operating system, algorithm	
	HT6	Introduction to python programming	• Dealing with inputs and outputting messages • Casting • Selection and logical operators • Condition controlled iteration • Generating random values	Variable, data type, iteration, operator, syntax error, interpreter, execute, if-else, algorithm	**PROGRESS CHECK 3**

Skill Development	• Algorithmic Thinking: The ability to decompose problems into manageable steps and to plan for the opportunity to use the programming constructs (sequence, selection and iteration) • Programming – Design, write, test and refine programs, using one or more high-level programming language with a textual program definition, either to a specification or to solve a problem • IT – Use of word processing, presentation and spreadsheet software