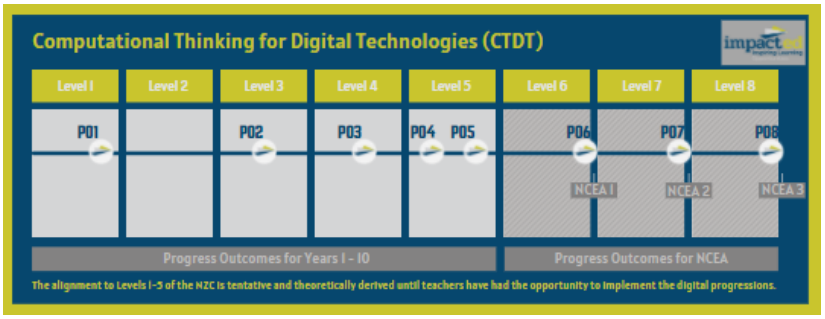
Computational Thinking (CT) Progress Outcomes

Always:

- **Take account of the end-users**
- **Be used in an authentic context**



Key Elements	Terminology
Progress Outcome 1 (PO1)	
• Non-computerised • Break down tasks into step-by-step instructions • Give instructions, identify errors & fix (debug)	***End-users**: who will use or see this?* ***Algorithm**: set of instructions to solve a problem or complete a task* ***Algorithmic thinking**: ordered instructions* ***Debug**: find & remove errors*
Progress Outcome 2 (PO2)	
• Non-computerised & computerised • Give, follow & debug simple algorithms • Use algorithms to create simple programs with outputs & sequencing	***Outputs**: what end-user will see or use* ***Program**: a series of instructions put into a computer* ***Sequencing**: An action, or event, leads to the next ordered action*
Progress Outcome 3 (PO3)	
• Decompose problems into step-by-step instructions to create algorithms • There can be more than one algorithm for each problem • Develop and debug simple programs • Use inputs, outputs, sequence & iteration • Data is stored in 2 states shown by binary digits	***Inputs:** how you put data into a device* ***Iteration:** Repeating part of an algorithm with a loop* ***Binary:** a number system that only uses two digits; 1 and 0* ***Bits:** Binary digits*
Progress Outcome 4 (PO4)	
• Decompose problems to create simple algorithms • Program: using sequence, selection & iteration • Use algorithms to create programs that use inputs, outputs, sequence, comparative operators & iteration • Debug, fix and explain errors in algorithms & programs • Evaluate the efficiency of algorithms & user interfaces Digital Devices Knowledge: • Represent data with binary digits • Have ways to find errors in storage & transmission	***Selection:** In a selection structure, a question is asked, and depending on the answer, the program takes one of two courses of action,* ***Comparative operators:** used in conditional statements, especially loops, where the result decides whether execution should proceed*
Progress Outcome 5 (PO5)	
• Independently decompose problems into algorithms • Use algorithms to create programs with inputs, outputs, sequence, selection using comparative & logical operators, different data types & iteration • Determine when to use different control structures • Document, test & debug programs • Understand how computers store complex data types • Develop programs that consider human-computer interaction (HCI) heuristics	***Logical operators:** used to determine the logic between variables or values.* ***Control structures:** a block of programming that analyses variables and chooses a direction in which to go based on given parameters.* ***Heuristics**: A heuristic is a mental shortcut that allows people to solve problems and make judgments quickly and efficiently.*

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