

Assessment Schedule – 2024

Digital Technologies and Hangarau Matihiko: Demonstrate understanding of a computer science concept (91898)

Assessment Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<p>Demonstrate understanding of a computer science concept involves:</p> <ul style="list-style-type: none"> identifying the computer science concept providing details of how the concept is used, is implemented, or occurs explaining how the concept has been or could be applied to address an opportunity explaining relevant mechanisms that shape the concept. 	<p>Demonstrate in-depth understanding of a computer science concept involves:</p> <ul style="list-style-type: none"> explaining the impact of the concept. 	<p>Demonstrate comprehensive understanding of a computer science concept involves:</p> <ul style="list-style-type: none"> explaining key problems or issues related to the concept.

Cut Scores

Not Achieved	Achievement	Achievement with Merit	Achievement with Excellence
0–2	3–4	5–6	7–8

Evidence

Question One – Artificial intelligence

N1	N2	A3	A4	M5	M6	E7	E8
<p>Makes a few comments, but the response is incomplete or does not relate to the chosen topic.</p>	<p>The digital outcome is not at Level 7 of the New Zealand Curriculum. Makes relevant comments in some parts of the response, with some relevance to the chosen topic, but with insufficient detail.</p>	<p>Explains how AI is used by shops for self-checkouts, providing TWO advantages or challenges.</p> <p>Explains how effective the given chatbot is, and why it is an example of weak or strong AI.</p> <p>Explains the relevance of the Turing test in evaluating chatbots and AI image generation.</p> <p>OR</p> <p>Explains common methods of evaluating an AI product.</p> <p>Some aspects of the response may be partial or weak.</p>	<p>Explains, in detail, how AI is used by shops for self-checkouts, providing TWO advantages or challenges.</p> <p>Explains, in detail, how effective the given chatbot is, and why it is an example of weak or strong AI.</p> <p>Explains, in detail, the relevance of the Turing test in evaluating chatbots and AI image generation.</p> <p>OR</p> <p>Explains, in detail, common methods of evaluating an AI product.</p>	<p>Explains how AI can be future-proofed to ensure successful adoption.</p> <p>OR</p> <p>Explains, giving examples, ethical issues with large language models, such as ChatGPT or Google Gemini / Bard.</p> <p>Some aspects of the response may lack detail.</p>	<p>Explains, in depth, how AI can be future-proofed to ensure successful adoption.</p> <p>OR</p> <p>Explains, in depth and giving examples, ethical issues with large language models, such as ChatGPT or Google Gemini / Bard.</p>	<p>Explains 'AI hallucinations' and their impact on AI.</p> <p>OR</p> <p>Explains 'supervised learning' and 'unsupervised learning', with examples of where each method might be used.</p> <p>Some aspects of the response may be missing, for example: the relevance, purpose, need, and effectiveness.</p>	<p>Explains, in detail, 'AI hallucinations' and their impact on AI.</p> <p>OR</p> <p>Explains, in detail, 'supervised learning' and 'unsupervised learning', with examples of where each method might be used.</p>

N0 = No response; no relevant evidence.

Question Two – Computer security

N1	N2	A3	A4	M5	M6	E7	E8
<p>Makes a few comments, but the response is incomplete or does not relate to the chosen topic.</p>	<p>Makes relevant comments in some parts of the response, with some relevance to the chosen topic, but with insufficient detail.</p>	<p>Explains issues that online retailers have with computer security, and TWO steps they can take to protect themselves and their customers.</p> <p>Explains what is good about the sample program and ways to improve it.</p> <p>Explains advantages and disadvantages of an improved program.</p> <p>Explains common issues people face with computer security, and how they can protect themselves.</p> <p>OR</p> <p>Explains what blacklists and whitelists are and their challenges.</p> <p>Some aspects of the response may be partial or weak.</p>	<p>Explains, in detail, issues that online retailers have with computer security, and TWO steps they can take to protect themselves and their customers.</p> <p>Explains, in detail, what is good about the sample program and ways to improve it.</p> <p>Explains advantages and disadvantages of an improved program.</p> <p>Explains, in detail, common issues people face with computer security, and how they can protect themselves.</p> <p>OR</p> <p>Explains, in detail, what blacklists and whitelists are and their challenges.</p>	<p>Explains ethical issues with data privacy and how organisations should behave.</p> <p>OR</p> <p>Explains how organisations can future-proof themselves from computer security threats.</p> <p>Some aspects of the response may lack detail.</p>	<p>Explains, in depth, ethical issues with data privacy and how organisations should behave.</p> <p>OR</p> <p>Explains, in depth, how organisations can future-proof themselves from computer security threats.</p>	<p>Explains 'biometric authentication' and the challenges / threats of using this instead of passwords.</p> <p>OR</p> <p>Explains 'social engineering', and how organisations can help users so they don't fall for, or are prevented from falling for, scams.</p> <p>Some aspects of the response may be missing, for example: the relevance, purpose, need, and effectiveness.</p>	<p>Explains, in detail, 'biometric authentication' and the challenges / threats of using this instead of passwords.</p> <p>OR</p> <p>Explains, in detail, 'social engineering' and how organisations can help users so they don't fall for, or are prevented from falling for, scams.</p>

N0 = No response; no relevant evidence.

Question Three – Error control

N1	N2	A3	A4	M5	M6	E7	E8
<p>Makes a few comments, but the response is incomplete or does not relate to the chosen topic.</p>	<p>Makes relevant comments in some parts of the response, with some relevance to the chosen topic, but with insufficient detail.</p>	<p>Gives an example of where error control is found and TWO advantages of error control for retailers.</p> <p>Explains what is contained in the given QR code and how QR codes work.</p> <p>Explains how a QR code uses error control to ensure accuracy, and explains how effective it is.</p> <p>Explains ‘check digits’, and gives an example of where they are found and how they work.</p> <p>OR</p> <p>Explains how automatic repeat requests (ARQ) and forward error correction (FEC) work in networks.</p> <p>Some aspects of the response may be partial or weak.</p>	<p>Explains, in detail, where error control is found and TWO advantages of error control for retailers.</p> <p>Explains, in detail, what is contained in the given QR code and how QR codes work.</p> <p>Explains, in detail, how QR codes use error control to ensure accuracy, and explains how effective it is.</p> <p>Explains, in detail, ‘check digits’, and gives an example of where they are found and how they work.</p> <p>OR</p> <p>Explains, in detail, how automatic repeat requests (ARQ) and forward error correction (FEC) work in networks.</p>	<p>Explains whether still using UPC barcodes is an example of future-proofing or a reluctance to change to QR codes.</p> <p>OR</p> <p>Explains how error correction has future-proofed the internet from transmission errors.</p> <p>Some aspects of the response may lack detail.</p>	<p>Explains, in depth, whether still using UPC barcodes is an example of future-proofing or a reluctance to change to QR codes.</p> <p>OR</p> <p>Explains, in depth, how error correction has future-proofed the internet from transmission errors.</p>	<p>Explains the principles of ‘Reed-Solomon’ error control.</p> <p>OR</p> <p>Explains how error control works in the different levels of RAID storage.</p> <p>Some aspects of the response may be missing, for example: the relevance, purpose, need, and effectiveness.</p>	<p>Explains, in detail, the principles of ‘Reed-Solomon’ error control.</p> <p>OR</p> <p>Explains, in detail, how error control works in the different levels of RAID storage.</p>

N0 = No response; no relevant evidence.