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2

NZQA
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MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!

COMMON ASSESSMENT TASK

Level 2 Digital Technologies and Hangarau Matihiko, 2019

91898 Demonstrate understanding of a computer science concept

Credits: Three

Achievement Criteria		
Achievement	**Achievement with Merit**	**Achievement with Excellence**
Demonstrate understanding of a computer science concept.	Demonstrate in-depth understanding of a computer science concept.	Demonstrate comprehensive understanding of a computer science concept.

Type your School Code and 9-digit National Student Number (NSN) into the header at the top of this page. (If your NSN has 10 digits, omit the leading zero.)

Answer all parts of the assessment task in this document.

Your answer should be presented in 12pt Arial font, within the expanding text boxes, and may only include information you produce during this examination session.

You should aim to write between **800–1500 words** in total.

Save your finished work as a PDF file with the file name used in the header at the top of this page ("SchoolCode-YourNSN-91898.pdf").

By saving your work at the end of the examination, you are declaring that this work is your own. NZQA may sample your work to ensure that this is the case.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

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INSTRUCTIONS

Read all parts of the assessment task before you begin.

Select ONE of the following computer science concepts:

- computer security
- encryption
- error control
- complexity and tractability
- artificial intelligence.

Type your chosen computer science concept in the space below:

Begin your answers on page 3.

ASSESSMENT TASK

(a) Briefly explain your chosen computer science concept.

(b) Choose ONE of the following three options to answer.

***EITHER:* OPTION ONE**
Give details of how your chosen computer science concept is used in current digital technologies.

***OR*: OPTION TWO**
Give details of how your chosen computer science concept is implemented in current digital technologies.

***OR*: OPTION THREE**
Give details of how your chosen computer science concept occurs in current digital technologies.

(c) **Opportunities** include providing a solution, improving functionality and solving a known issue / risk.

Answer ONE of the following two options:

***EITHER*: OPTION ONE**
How **is** your chosen computer science concept **currently** applied to address an opportunity?

***OR*: OPTION TWO**
How **could** your chosen computer science concept **be** applied to address an opportunity?

(d) **Mechanisms**

Select TWO of the following seven mechanisms:

- techniques
- algorithms
- principles
- protocols
- systems
- procedures
- processes.

(i) Type ONE of your two selected mechanisms in the space below:

Explain how this mechanism relates to your chosen computer science concept.

(ii) Type your OTHER selected mechanism in the space below:

Explain how this second mechanism relates to your chosen computer science concept.

(e) Explain in depth the impact that ONE or TWO of the following factors has on your chosen computer science concept.

Ethical issues:

Social impact:

Sustainability:

Human factors:

Future proofing:

(f) Comprehensively explain the key problems or issues related to your chosen computer science concept.
This can include showing links between and expanding on your answers to parts (a)–(e).