

Assessment Specifications

Level 3 Digital Technologies 2025

Published in October 2024

General information

Domain: Technology
Standards: 91908, 91909

[Link to Digital Technologies](#)

[National secondary examinations timetable](#)

Information relating to all achievement standards

Further information about digital external assessment can be found on the NZQA website.

[Digital external assessment](#)

Equipment required

Laptop or desktop PC.

Specific information for individual achievement standards

Standard:	91908
Title:	Analyse an area of computer science
Version:	1
Number of credits:	3
Assessment method:	Examination, end of year
Assessment medium:	Online digital examination

Candidates will receive a printed resource booklet to support their answers.

Candidates will be required to respond in short and/or extended answers (800–1500 words in total) to questions relating to their choice of ONE of the following areas of computer science:

Complexity and tractability

Computer vision

Computer graphics.

For **Complexity and tractability**, questions may cover: polynomial and non-polynomial time complexity, Big O notations $O(1)$, $O(\log n)$, $O(n)$, $O(n^k)$, $O(2^n)$, $O(n!)$, and best-case, worst-case, and average-case time complexity, complexity classes (P, NP, NP-complete), solving complex problems (approximation algorithms/heuristics), algorithm design and optimisation, optimal solutions (Travelling Salesman/knapsack, etc.).

For **computer vision**, questions may cover: noise, thresholding, edge detection, image processing for computer vision, applications in fields of obstacle detection (e.g. Lidar and stereo vision), feature extraction (e.g. Viola Jones, Haar-like features) and medical detection, and the application of techniques to medical diagnosis (e.g. convolutional neural networks, decision trees, and random forests).

For **computer graphics**, questions may cover: bitmap and vector graphics, matrices and transformations, line and circle algorithms (e.g. Bresenham's line algorithm, midpoint circle algorithm), image rendering (raytracing vs rasterisation), texture mapping, lighting, and lighting effects and reflections.

Special notes:

Teachers are encouraged to help their students to develop answering techniques to ensure that they are able to respond clearly and concisely within the total recommended word limit. Responses that exceed this may not be considered for assessment past the 1500-word limit.

Teachers are strongly encouraged to prepare students to be able to apply their understanding of computer science to unfamiliar contexts.

Teachers should prepare students to identify and articulate instances where overlap with various areas of computer science occurs, e.g. with artificial intelligence.

Standard:	91909
Title:	Present a reflective analysis of developing a digital outcome
Version:	1
Number of credits:	3
Assessment method:	Common Assessment Task (DCAT)
Assessment medium:	Digital Submitted DCAT
Assessment event scheduling:	Term 3 Week 9; between Monday 8 th and Friday 12 th September 2025.

A common assessment task (CAT) is developed and marked by NZQA, and administered by a school in a single session during a period of assessment specified by NZQA. Candidates can only attempt the digital technologies common assessment activity once.

Candidates will be required to respond in short and/or extended answers (800–1500 words in total) to questions relating to a digital outcome they have developed within the past 12 months. Candidates must have developed the outcome themselves. It must not be selected or sourced from AI, the internet, or anyone else's digital product or work.

The digital outcome must be based on Level 8 of The New Zealand Curriculum (see the [Teaching and Learning Guide for Digital Technologies](#)).

The questions will require candidates to discuss the decisions and considerations made during the development of the digital outcome, and evaluate both the outcome and the development process (see Explanatory Notes 4 and 5 of the standard).

The discussion will require candidates to focus on how the following considerations were considered during development of the digital outcome:

- selection of tools and techniques
- influence of stakeholder feedback
- aesthetics
- functionality
- cultural and/or ethical OR sustainability and/or futureproofing
- usability
- intellectual property.

Candidates must prepare up to THREE images (JPG or PNG) in advance to include in the assessment:

- a single image of the digital outcome (e.g. a website, a brand identity package, an electronic device)
- a single sample image showing a relevant digital component of the outcome in the software used to create it, for example:
 - the HTML / CSS for a website in a text editor (e.g. VS Code, Notepad++)
 - the 'layers' view of a vector or raster graphic (e.g. in Inkscape/ Illustrator, GIMP/Photoshop)
 - the source code for controlling an electronic device (e.g. in Arduino C, PBasic)
 - the CAD / CAM file for a 3D model (e.g. in Blender, Fusion 360, SketchUp)
 - the source code for an application in a suitable text editor (e.g. VS Code, Replit)
- a single image of their development process (e.g. agile development, a planning chart, etc).

Candidates will only have access to their three images. They will not have access to their digital outcome or any other online or paper resources.

Conditions of assessment

Candidates must complete their assessment individually under teacher supervision, in accordance with the NCEA Assessment and Examination Rules and Procedures.

The material submitted for assessment must be all the candidates' own work. Unless specified below, candidates are not permitted to access any resources (either in hard copy or online) other than those supplied in the assessment itself.

Authenticity

The school may be required to provide a link to evidence of the candidate's digital outcome (e.g. working files). Teachers are encouraged to help their students to develop answering techniques to ensure they can respond clearly and concisely within the total recommended word limit.

Submission requirements

Note that only the PDF file type may be submitted, and that other file types may not be able to be marked.