

Assessment Report

On this page

[91048: Demonstrate understanding of how technological modelling supports decision-making](#) ▾

[91049: Demonstrate understanding of how materials enable technological products to function](#) ▾

[91050: Demonstrate understanding of the role of subsystems in technological systems](#) ▾

[91053: Demonstrate understanding of design elements](#) ▾

- ▾

Level 1 Technology 2019

Standards [91048](#) [91049](#) [91050](#) [91053](#)

Part B: Report on standards

91048: Demonstrate understanding of how technological modelling supports decision-making

Candidates who were awarded **Achievement** commonly:

- identified a technological outcome they had developed
- provided evidence of the modelling by identifying one or more methods of functional modelling they had undertaken
- identified and described the decision(s) made as a result of reviewing the evidence of their own modelling
- stated how the decision(s) were used and linked to the development of their own technological outcome
- provided some evidence from their portfolios.

Candidates whose work was assessed as **Not Achieved** commonly:

- showed no evidence of what was learned from modelling
- wrote about the process of manufacturing the outcome
- undertook modelling that was irrelevant to the development of their outcome
- undertook relevant modelling but did not link it to any decision(s)
- provided no evidence from their portfolios
- wrote in terms of advantages and disadvantages or pros and cons
- demonstrated no understanding of the purpose of modelling, the evidence gained and the subsequent decision(s)
- were limited by scaffolded questions which did not meet the requirements of the standard
- submitted incomplete or illegible material.

Candidates who were awarded **Achievement with Merit** commonly:

- undertook modelling that was relevant and necessary to the developing outcome
- explained why they had selected the form(s) of modelling used and how the evidence influenced subsequent decision(s) about the developing outcome.

Candidates who were awarded **Achievement with Excellence** commonly:

- were guided by a robust and personalised brief that allowed for sound modelling around social and technical aspects
- focussed their report on one technological outcome
- conducted modelling that was logical, sequential and linked to the developing outcome
- discussed, with reference to the social and physical environment, the purpose of technological modelling - both functional modelling and prototyping
- embedded social acceptability throughout the development of the outcome
- embedded technical feasibility throughout the development of the outcome
- discussed how the modelling prevented or identified potential problems in relation to the technical feasibility and social acceptance of the outcome
- provided clear photographic evidence in situ of the functional modelling and prototyping that had been undertaken
- evaluated the results of both the functional modelling and prototyping that had been undertaken
- considered risk management in their student practice throughout their technological modelling.

Standard specific comments

Candidates who relied on class modelling examples rather than conducting their own relevant modelling were disadvantaged.

91049: Demonstrate understanding of how materials enable technological products to function

Candidates who were awarded **Achievement** commonly:

- described their project, highlighting the required specifications, which helped to link the chosen materials and their performance properties to the project
- described the material(s) they had used, the performance properties of the material (s) and how these were useful in developing a technological outcome
- described the composition, structure and performance properties of their material (s), but understanding of how materials could be manipulated to allow their technological product to function was only just sufficiently demonstrated
- explained how the material (s) could be manipulated, but provided only basic information related to composition, structure and performance properties
- used diagrams or written text to describe the composition and structure of the basic material (s) being used
- based their report on their own technological experience. i.e linked the material(s) being researched to their own project work
- presented a clearly structured report that had been scaffolded
- completed a bibliography, or referenced as appropriate, evidence that supported their project
- used student voice to demonstrate their understanding of how their chosen material(s) enabled their outcome to function.

Candidates whose work was assessed as **Not Achieved** commonly:

- described the performance properties of a material but did not address how the material was used or how it would be useful in the development of a technological outcome
- did not include the manipulation of material(s) in relation to their own practice
- did not explain how the material(s) used had been manipulated
- included a step by step description of how their project was made but did not cover the performance properties of the material which made it functional

- presented irrelevant material, that did not link to their project for example the history of materials; how wood is cultivated.
- identified information only, often by use of a list.

Candidates who were awarded **Achievement with Merit** commonly:

- explained a material(s) in terms of its structure and composition, and how these determine its' performance properties, allowing the material to be manipulated to perform its function and contribute to developing an outcome
- presented evidence of interactions with their project specifications, material(s) research, and how these related to each other
- presented examples from their own projects that was clearly in their own voice
- presented clear, structured responses which explained but did not discuss.

Candidates who were awarded **Achievement with Excellence** commonly:

- discussed a material(s) in terms of its properties, composition and structure and how its structure allows it to be manipulated to perform its function and contribute to developing a functioning outcome
- provided a discussion, justifying material selection and how the individual properties of the material(s) combine with other materials to ensure the outcome functions as intended
- based the report on their own experiences whilst developing their own project, using trialling and testing of different materials and communication with experts in their chosen field
- compared and discussed in depth the composition, structure and performance properties of different types of material that enabled their project to function as intended, as required by the performance specifications provided
- used complex sentence structures and synthesised the information they had discovered
- demonstrated understanding of the material(s) they used throughout their discussion

- wrote clear, structured reports.

Standard specific comments

Candidates who provided evidence in the form of a clearly structured report related to their own practice were advantaged. These candidates often used the bullet points of the standard to structure their report.

Candidates who used their own voice in the presentation of their evidence could often demonstrate their understanding in greater depth, enabling them to access the higher bands of achievement.

Candidates are encouraged to reference their reports as instructed in the Assessment Specifications.

91050: Demonstrate understanding of the role of subsystems in technological systems

Candidates who were awarded **Achievement** commonly:

- selected at least one technological system
- identified at least two subsystems within the technological system
- described the roles of at least two subsystems within a system
- described using accurate technical terms how these subsystems worked together to make the overall system function
- Limited their report to simple descriptions of the purposes of the subsystems and did not give detailed or in-depth explanations of the subsystem or its specific function.

Candidates whose work was assessed as **Not Achieved** commonly:

- misunderstood what a subsystem is referring to components as subsystems e.g. LEDs and resistors
- submitted lengthy explanations of how their own circuit worked at a component level but did not identify the subsystems within their system.
- identified subsystems but did not describe the roles of the subsystems
- did not relate how the various subsystems they described worked together to achieve the objective of the system
- gave general, inaccurate or vague descriptions of subsystems within a system
- often used incorrect terminology about systems
- described non-technological systems such as biological, managerial or organisational systems.

Candidates who were awarded **Achievement with Merit** commonly:

- explained how specific control functions were performed between various subsystems in a technological system
- had a correct understanding of feedback and explained how control information was taken from an output subsystem back to an input subsystem to control, adjust or regulate the behaviour of the system
- explained at least two advantages and two disadvantages of at least one subsystem within the technological system.
- Included some explanations of design, development and maintenance but did not extend these with discussion points such as detailed comparisons, contrasting aspects and/or justifications to lift their grade to an excellence.

Candidates who were awarded **Achievement with Excellence** commonly:

- discussed both the advantages and disadvantages of at least one subsystem within a particular technological system through comparisons or by evaluating specific decisions made by technologists
- discussed all three aspects of design, development, and maintenance decisions made by technologists regarding subsystems and their implications on a particular technological system.

Standard specific comments

Candidates were required to demonstrate their understanding of the role of subsystems in technological systems. Candidates chose from a number of alternatives and wrote reports that communicated their understanding often using diagrams or pictures to assist their explanations.

A significant number of candidates limited their report to only the achieved criteria and did not attempt to explain feedback or control within a technological system. This was particularly evident when students described their own project (e.g. a railway crossing barrier arm) which had no feedback but only control.

Some candidates who used computer systems as their systems incorrectly confused the concept of self-regulation with automation. For example, when a microprocessor in a computer reads instructions this is not an example of self-regulation, it is simply an automatic process.

Some candidates failed to gain merit or excellence grades as their explanations of feedback, and in some cases control, were incorrect.

Feedback in technological systems does not include how the system gives information about its operation to users of the system; technological feedback is a self-regulating feature of technological systems and occurs without human interaction or intervention.

91053: Demonstrate understanding of design elements

Candidates who were awarded **Achievement** commonly:

- identified and described relevant design elements within an outcome they had designed or those of others
- included some personal voice, although evidence was often limited by limited detail

- described design elements appropriate to the outcome(s) and how they affected the quality of the outcome(s)
- identified and described both the subjective and objective considerations within a specified context
- described how the design elements contributed positively and/or negatively to the quality of the design.
- selected simplistic outcomes such as a basic website, banner advertisement or magazine cover, which limited their opportunity to describe the relevant design elements.

Candidates whose work was assessed as **Not Achieved** commonly:

- described poorly designed outcomes and/or products which did not give them enough scope to demonstrate understanding of design elements
- used bullet points to convey the use of design elements - identifying rather than describing
- interpreted design elements incorrectly, showing limited understanding
- provided design element definitions without commenting on how they had been applied within a technological outcome
- identified the relevant design elements present within a product but did not describe the effect these elements had on the quality of the specified context
- submitted large quantities of supplied and/or non-referenced information that they had not processed/personalised or applied to a technological outcome or context.

Candidates who were awarded **Achievement with Merit** commonly:

- identified, described and explained how design elements had been applied to the technological outcome(s) chosen
- compared, contrasted and evaluated the application of design elements, either within their own practice or the practices of others
- explained how specific elements had been applied to improve the aesthetics and/or function of a product (objective/subjective)

- reflected on the development of a product and how the application of design elements impacted on the product
- illustrated the application of design elements throughout the development of their outcome throughout their report.
- compared and contrasted existing products with their own outcomes which enabled in-depth discussion on the quality of the design(s) and underpinning design elements.

Candidates who were awarded **Achievement with Excellence** commonly:

- demonstrated independent research, design, and on-going and reflective analysis within their practice
- compared, contrasted and evaluated the application of design elements, either within their own practice and/or the technological outcomes and often discussed how the interaction of different design elements impacted on the quality of the design
- placed an emphasis on how the application of design elements impacted on their own practice and discussed how it impacted on design decisions.

Standard specific comments

In this standard, candidates are required to demonstrate their understanding of design elements. This involves commenting on where and how design elements have been utilised within a technological outcome(s). The most common format is to explore existing products and then compare the application of design elements within the candidate's own technological outcome.

When choosing existing products, wherever possible, the products chosen should complement a candidate's own practice. Candidates who accessed a wide range of contexts or chose existing products that were unrelated to their technological practice were often unable to articulate in-depth understanding.

The focus of candidate reports should be how the different design elements have been utilised, and how this has impacted on the quality of the design. Often a design that improves the aesthetics of a product can impact on functionality. It is these areas that candidates need to explore in order to access the higher grades. This was often evident as a conclusion or summary in which the candidate

explained and justified the prioritisation of factors and design decisions within their own technological practice.

A number of candidates who were awarded a Not Achieved grade limited their critique to identifying the existence of an element(s) within a design rather than how the design elements were applied, and did not comment on the impact (both positive and negative) that the application of design elements had on the outcome. In addition, some candidates' achievement was limited due to different products being used to identify/describe the application of each design element. These candidates were unlikely to advance beyond an Achieved grade due to a lack of explanation and the use of a less robust compare/contrast model.

Comprehensive understanding was often characterised by candidates commenting on how the application of one element can impact and influence other design elements. Candidates who used writing frames that promoted this integrated approach to the use and application of design elements were often advantaged.

Candidates who utilised templates and teacher-led activities often produced repetitive text and many duplicated the same content and level of evidence for different products. In addition, it was often difficult to differentiate between information provided by the teacher, downloaded or resulting from group work, and that produced by individual candidates. In cases where a candidate's own work could not be clearly recognised candidates seldom gained grades higher than Achieved. These submissions were often template based with limited scope for divergent thought.

[Technology subject page](#)

Previous years' reports

[2018 \(PDF, 170KB\)](#) [2017 \(PDF, 71KB\)](#) [2016 \(PDF, 241KB\)](#)

