**NZQA**

**Approved**

Achievement standard: 91362 Version 3

Standard title: Demonstrate understanding of the nature of technological outcomes

Level: 2

Credits: 4

Resource title: Know your trolley

Resource reference: Generic Technology VP-2.9 v2

Vocational pathway: Manufacturing and Technology

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| Quality assurance status | These materials have been quality assured by NZQA.  NZQA Approved number A-A-02-2015-91362-02-8260 |
| Authenticity of evidence | Assessors/educators must manage authenticity for any assessment from a public source, because learners may have access to the assessment schedule or exemplar material.  Using this assessment resource without modification may mean that learners’ work is not authentic. Assessors/ educators may need to change figures, measurements or data sources or set a different context or topic to be investigated or a different text to read or perform. |

Vocational Pathway Assessment Resource

Achievement standard: 91362

Standard title: Demonstrate understanding of the nature of technological outcomes

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Vocational pathway: Manufacturing and Technology

Learner instructions

# Introduction

This assessment activity requires you to demonstrate understanding of the nature of trolleys.

You are going to be assessed on how comprehensively you demonstrate your understanding of the nature of trolleys.

The following instructions provide you with a way to structure your work so you can demonstrate what you have learnt and achieve success in this standard.

Assessor/educator note: It is expected that the assessor/educator will read the learner instructions and modify them if necessary to suit their learners.

# Task

Refer to a range of existing trolleys to show your understanding (e.g. shopping trolleys, flatbed trolleys for transporting goods, tea trolleys, baggage trolleys, or racing trolleys).

You will:

* explain physical design elements (e.g. movement, pattern, rhythm, proportion, balance, harmony, contrast, style, texture and/or colour) and how they relate to the physical attributes (style, appearance) of trolleys
* explain functional design elements (e.g. strength, durability, safety, stability, efficiency, reliability, user-friendliness, ergonomic fit, texture, consistency and/or structure) and how they relate to the functional attributes of trolleys
* explain how the physical and functional attributes contribute overall to what trolleys look like, what they are made of and what they can do
* explain how design elements appear to have been prioritised when designing trolleys
* discuss how the fitness for purpose of a trolley is related to its physical and functional nature and the environment where it will be located.

You could present your understanding as a presentation (e.g. slideshow, display board, portfolio or written report), which could include:

* annotated photos, drawings and/or pictures
* tables
* cue cards.

You could also include a practical demonstration.

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Assessor/Educator guidelines

# Introduction

The following guidelines are supplied to enable assessors/educators to carry out valid and consistent assessment using this internal assessment resource.

As with all assessment resources, education providers will need to follow their own quality control processes. Assessors/educators must manage authenticity for any assessment from a public source, because learners may have access to the assessment schedule or exemplar material. Using this assessment resource without modification may mean that learners' work is not authentic. The assessor/educator may need to change figures, measurements or data sources or set a different context or topic. Assessors/educators need to consider the local context in which learning is taking place and its relevance for learners.

Assessors/educators need to be very familiar with the outcome being assessed by the achievement standard. The achievement criteria and the explanatory notes contain information, definitions, and requirements that are crucial when interpreting the standard and assessing learners against it.

# Context/setting

This activity requires learners to demonstrate their comprehensive understanding of the nature of trolleys by:

* investigating trolleys, either individually or with a partner or group, to explore design elements, physical and functional attributes, and fitness for purpose
* creating an individual presentation.

# Conditions

Learners may find it helpful to make a trolley (e.g. for a trolley derby competition or for preparing and/or serving food at home). However, they do not have to make a trolley to achieve this standard.

This is an individual assessment activity.

# Resource requirements

Learners require access to:

* information about trolleys, including their design elements and attributes
* materials for their presentation (e.g. drawing materials, a computer and data projector).

# Additional information

Visits to industry or from practising technologists may be helpful.

# Assessment schedule: Generic Technology 91362 – Know your trolley

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| Evidence/Judgements for Achievement | Evidence/Judgements for Achievement with Merit | Evidence/Judgements for Achievement with Excellence |
| The learner demonstrates understanding of the nature of trolleys by using a presentation to:   * explain design elements as they relate to the physical and/or functional attributes of a trolley   For example:  The learner explains how the size and shape of wheels will affect such things as speed, steering, stability, safety (e.g. if small wheels hit a rock the trolley could stop), and how pattern, colour, contrast and/or texture can affect the desired ‘look’ of a trolley.   * explain how the physical and functional attributes contribute to the overall nature of a trolley   For example:  The learner explains how a trolley with a solid tray that does not allow food to be trapped is easier to clean and therefore suitable for an environment where hygiene is important (e.g. food manufacturing or handling).   * explain how design elements appear to have been prioritised in a trolley   For example:  The learner explains how design elements such as corporate branding/advertising are an important feature of a supermarket/airport trolley.  *The above expected learner responses are indicative only and relate to just part of what is required.* | The learner demonstrates in-depth understanding of the nature of trolleys by using a presentation to:   * explain design elements as they relate to the physical and/or functional attributes of a trolley   For example:  The learner explains how the size and shape of wheels will affect such things as speed, steering, stability, safety (e.g. if small wheels hit a rock the trolley could stop), and how pattern, colour, contrast and/or texture can affect the desired ‘look’ of a trolley.  • explain how the physical and functional attributes contribute to the overall nature of a trolley  For example:  The learner explains how a trolley with a solid tray that does not allow food to be trapped is easier to clean and therefore suitable for an environment where hygiene is important (e.g. food manufacturing or handling).  • explain how design elements appear to have been prioritised in a trolley  For example:  The learner explains how design elements such as corporate branding/advertising are an important feature of a supermarket/airport trolley.   * explain the fitness for purpose of a trolleys as related to its physical and functional nature and the environment where it is located   For example:  The learner explains how a trolley that is used for stacking tables in such places as a marae is designed to be suitable for use by people with no previous experience; and how the ergonomics of particular trolleys used in different environments make them fit for purpose or not, depending on the physical effect on the users.  *The above expected learner responses are indicative only and relate to just part of what is required.* | The learner demonstrates comprehensive understanding of the nature of trolleys by using a presentation to:   * explain design elements as they relate to the physical and/or functional attributes of a trolley   For example:  The learner explains how the size and shape of wheels will affect such things as speed, steering, stability, safety (e.g. if small wheels hit a rock the trolley could stop), and how pattern, colour, contrast and/or texture can affect the desired ‘look’ of a trolley.   * explain how the physical and functional attributes contribute to the overall nature of a trolley   For example:  The learner explains how a trolley with a solid tray that does not allow food to be trapped is easier to clean and therefore suitable for an environment where hygiene is important (e.g. food manufacturing or handling).  • explain how design elements appear to have been prioritised in a trolley  For example:  The learner explains how design elements such as corporate branding/advertising are an important feature of a supermarket/airport trolley.  • discuss how the fitness for purpose of a trolley is related to its physical and functional nature and the environment where it is located  For example:  The learner compares food service trolleys used in different situations, such as a mobile butcher’s block for home use and a hospital food trolley. The timber used on a butcher’s block may have been chosen so it looks smart when food is presented in the home, and has a finish that is safe and non-toxic for food preparation (e.g. easy to clean, abrasion and stain-resistant). The hospital food trolley is designed for heavy-duty use on hospital floors and for portability by using powder-coated steel/stainless steel and non-marking, free-moving wheels. It has an efficient design by being multi-tiered, with high-sided trays and bins for waste that can be easily clipped on and off.  *The above expected learner responses are indicative only and relate to just part of what is required.* |

Final grades will be decided using professional judgement based on an examination of the evidence provided against the criteria in the Achievement Standard. Judgements should be holistic, rather than based on a checklist approach.