**NZQA**

**Approved**

Achievement standard: 91362 Version 3

Standard title: Demonstrate understanding of the nature of technological outcomes

Level: 2

Credits: 4

Resource title: The nature of fridges

Resource reference: Generic Technology VP-2.9 v2

Vocational pathway: Construction and Infrastructure

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| Date version published | February 2015 Version 2  To support internal assessment from 2015 |
| Quality assurance status | These materials have been quality assured by NZQA.  NZQA Approved number A-A-02-2015-91362-02-8261 |
| 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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Learner instructions

# Introduction

This assessment activity requires you to demonstrate understanding of the nature of fridges (including stand-alone freezers and fridges with freezer compartments).

You are going to be assessed on how comprehensively you demonstrate your understanding of the nature of fridges (including stand-alone freezers and fridges with freezer compartments).

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

Prepare a presentation or report that shows your understanding by referring to a range of fridges. This might include different styles (for example configuration and colour), features (for example defrosting, water dispenser, rollers) or types (for example domestic, energy-source). The purpose of your report is to brief kitchen designers about the latest technological developments relating to fridges.

You will:

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

You could present your understanding as a presentation (for example slideshow, display board, portfolio, pamphlet, video) or as a written report, which could include:

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

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 comprehensive understanding of the nature of fridges by:

* investigating fridges, 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

This is an individual assessment activity.

# Resource requirements

Learners require access to:

* information about fridges, including their design elements and attributes
* materials for their presentation, which might include drawing materials, a computer and data projector.

# Additional information

Visits to industry or from practising technologists may be helpful.

# Assessment schedule: Generic Technology 91362 – The nature of fridges

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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 fridges by using a presentation to:   * explain the design elements as they relate to the physical and/or functional attributes of a fridge   For example:  The learner explains how an upright freezer with sliding drawers minimises cool-air loss; and how a fridge/freezer is ergonomically designed so that the most-used compartment, the fridge, is at the top.   * explain how the physical and functional attributes contribute to the overall nature of a fridge   For example:  The learner explains how a stainless steel fridge is popular with the more sophisticated market because of the high quality, durable construction, cutting-edge design and stylish look. Possible disadvantages: they are easily scratched and show fingerprints. These are not generally significant factors with this market.   * explain how design elements appear to have been prioritised in a fridge   For example:  The learner explains how a fridge design has traditionally focused on keeping food chilled, but now design elements such as sleekness, colour, efficiency of energy, ease of use (including such things as remote vision) have become more significant; and how technological developments to make fridges run silently have been driven in part by hotel/studio apartment-style living.  *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 fridges by using a presentation to:   * explain the design elements as they relate to the physical and/or functional attributes of a fridge   For example:  The learner explains how an upright freezer with sliding drawers minimises cool-air loss; and how a fridge/freezer is ergonomically designed so that the most-used compartment, the fridge, is at the top.  • explain how the physical and functional attributes contribute to the overall nature of a fridge  For example:  The learner explains how a stainless steel fridge is popular with the more sophisticated market because of the high quality, durable construction, cutting-edge design and stylish look. Possible disadvantages: they are easily scratched and show fingerprints. These are not generally significant factors with this market.  • explain how design elements appear to have been prioritised in a fridge  For example:  The learner explains how a fridge design has traditionally focused on keeping food chilled, but now design elements such as sleekness, colour, efficiency of energy, ease of use (including such things as remote vision) have become more significant; and how technological developments to make fridges run silently have been driven in part by hotel/studio apartment-style living.   * explain how the fitness for purpose of a fridge is related to its physical and functional nature and the environment where it is located   For example:  The learner explains how the size of a fridge may depend on the lifestyle of the users (e.g. inner-city dwellers who have ready access to supermarkets, or people who value fresh food, may choose a smaller fridge; those who are environment, health or budget conscious may choose a fridge that has a water dispenser or is energy efficient); how the kitchen triangle affects the optimum side for the hinge; and gives examples of how different fridge designs consider different storage and cooling needs (e.g. humidity controls for vegetable and fruit spaces, and large freezer space for longer storage), giving more options to users based on their lifestyle.  *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 fridges by using a presentation to:   * explain the relationship between design elements and the physical and/or functional attributes of a fridge   For example:  The learner explains how an upright freezer with sliding drawers minimises cool-air loss; and how a fridge/freezer is ergonomically designed so that the most-used compartment, the fridge, is at the top.   * explain how the physical and functional attributes contribute to the overall nature of a fridge   For example:  The learner explains how a stainless steel fridge is popular with the more sophisticated market because of the high quality, durable construction, cutting-edge design and stylish look. Possible disadvantages: they are easily scratched and show fingerprints. These are not generally significant factors with this market.  • explain how design elements appear to have been prioritised in a fridge  For example:  The learner explains how a fridge design has traditionally focused on keeping food chilled, but now design elements such as sleekness, colour, efficiency of energy, ease of use (including such things as remote vision) have become more significant; and how technological developments to make fridges run silently have been driven in part by hotel/studio apartment-style living.  • discuss how the fitness for purpose of a fridge is related to its physical and functional nature and the environment where it is located  For example:  The learner discusses how the size/style of a fridge may depend on users’ shopping, eating, cleaning, lifestyle habits; how the kitchen triangle/available space affects the optimum side for the hinge and style of fridge; how fridge models are designed for different storage and cooling needs; and compares and contrasts fridge models based on users’ needs and price ranges (basic models having auto-defrost, smudge-free surfaces and ice dispensers, and higher range models having extras such as electronic and zoned temperature controls, integrated LCD TVs, iPod docks and touchscreens for recipes and notes).  *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.