**NZQA**

**Approved**

Achievement standard: 91071 Version 3

Standard title: Implement basic procedures to produce a specified digital information outcome

Level: 1

**Credits:** 4

Resource title: Power to the people

Resource reference: Digital Technologies VP-1.41 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-02-2015-91071-02-7337 |
| 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

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Learner instructions

# Introduction

This assessment activity requires you to implement basic procedures to produce an information brochure for a solar power installation company that meets specifications.

You are going to be assessed on how efficiently you implement basic procedures to produce a specified information brochure for a solar power installation company. You need to demonstrate that you can work independently and accurately.

The following instructions provide you with a way to structure your work to demonstrate what you have learnt to allow you to 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

You are to prepare the information brochure for a new start-up firm which is installing solar power systems into homes. The firm’s name is Solar Magic New Zealand and they are based in Christchurch.

Their contact details are:

Address 1934 Blenheim Rd, Hornby, Christchurch

Phone 03 555 6699; 0800 765 2762 (0800 SOLARMC)

sales@Solarmc.co.nz

www.SolarMC.co.nz

When preparing the information brochure:

* apply a set of techniques to produce a two to four page brochure using the supplied information
* select the most suitable software for producing the information brochure from at least two of: spreadsheet, word processing, databases, or presentation software
* apply file management procedures
* apply design elements and/or formatting techniques as appropriate
* apply data integrity and testing procedures to ensure the brochure meets specifications
* follow legal, ethical and moral responsibilities as appropriate.

In creating the brochure, keep to the following specifications.

## Specifications

The brochure will:

* be two to four A4 page equivalents
* contain information, images and data
* raw data will be displayed in graphical form
* use two appropriate software applications
* be designed to appeal to the target market of 20-40 year olds
* be readable
* include page numbers as a header or footer
* calculate the savings that can be made over the first 10 years of the solar panel’s life assuming that the savings in the first year are $1,200 and that the price of electricity will increase by 5% every year. Also calculate the accumulated savings over the 10 year period (refer to Resource A)
* calculate the average amount of money saved per year for the 10 year period
* calculate the payback period using the average savings per year if the system costs $20,000 to install
* calculate the total amount of extra money that could be saved if the increase was 10% per year
* include two graphs:
	+ one showing the savings per year over the 10 years for both 5 and 10%
	+ the other showing the accumulated savings per year over the 10 years for 5% savings.

Note: You may refer to existing templates for information and ideas, but you may not simply download a template and change its appearance – to do this would not fulfil the requirements of the task.

Resources A and B contain information required for your information brochure. Insert data from your financial information where indicated in Resource B, and the graphs that you have produced showing the data indicated in the specifications. You may, if you wish, include some suitable and relevant images as well.

# Resources

## Resource A – Data Table

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** |
| **Savings 5%** | **$1,200** |  |  |  |  |  |  |  |  |  |
| **Accumulated Savings 5%** | **$1,200** |  |  |  |  |  |  |  |  |  |
|  **Savings 10%** | **$12,00** |  |  |  |  |  |  |  |  |  |

## Resource B – Data for Brochure

Electricity prices in New Zealand continue to rise. Solar power can help New Zealanders to have more control over their power bills. New Zealanders pay two thirds more for their electricity than Australians do. We have more solar capacity than Germany, a country that is currently one of the highest users of solar technology.

Using solar energy reduces our reliance on foreign oil, and makes New Zealand more energy independent. New Zealand imports an increasing percentage of its primary energy needs, making us more vulnerable to price spikes and shortages. Sustainable energy is an excellent solution for both new and existing homes - solar panels can easily be installed on the roof of your home. If you are building a new home you should consider installing solar now as it will likely be cheaper. At the very least you should make provisions for it i.e. fit a solar ready water cylinder, put pipe work and wiring in place. Solar power is the conversion of sunlight into electricity.

The average home can easily save up to 70% of power bills with the installation of a solar power system, depending on the size of the system and suitability of the home and location.

The world is suffering from climate change due to the increased burning of fossil fuels to generate power, amongst other causes. Taking control of your energy use and harvesting the free power of the sun through your solar power system can help you to play your part in the conservation of our planet for future generations.

Power prices are expected to increase by 5+ % every year over the next few years so investing in a solar power system may reflect significant savings. Solar power that is generated by solar panels is most often used in what is referred to as a “grid-linked” system. This means that the home is still connected to the mains power supplier or the national grid. The power generated by the home’s solar system is used in the home at the time of generation and any unused power is fed back into the grid through the home’s power meter. Power companies will generally credit a home owner’s account for this power that is “exported” to the grid. When the sun is not shining the home uses power from the grid as usual, the power generated during sunlight hours offsets the total power used saving you money. The life span of the solar equipment is more than 25 years and reputable manufacturers have a 25 year warranty.

Over the first 10 years it is expected that you will save at least [insert amount from spreadsheet] if you save $1,200 in the first year based on price increases of 5% each year. This is an average saving of [insert amount from spreadsheet] per year. The saving in electricity will mean that if the system cost $20,000 it would take [insert amount from spreadsheet] years to pay back the installation cost based on the average savings over the first 10 year period of use. If the increase in power was 10% per year you would save an additional [insert amount from spreadsheet] over the 10 year period. After this think of the free power you may be getting!

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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 efficiently implement basic procedures, using at least two software applications, to produce an information brochure for a solar power installation company. Desktop publishing software should not be used.

# Conditions

This is an individual assessment task. Learners should complete all their practical work in such a manner that assessors/educators can assess how the techniques are implemented as well as the quality of the outcome.

# Resource requirements

Access to computers and to appropriate software, for example Word, Excel, Access, Numbers, Pages, Base, and Calc.

# Additional information

Learners may not use desktop publishing software. The assessor/educator may provide the text electronically, but only as a pdf or text file so that learners decide what software to use.

# Assessment schedule: Digital Technologies 91071 – Power to the people

|  |  |  |
| --- | --- | --- |
| Evidence/Judgements for Achievement | Evidence/Judgements for Achievement with Merit | Evidence/Judgements for Achievement with Excellence |
| The learner implements basic procedures to produce an information brochure about the benefits of solar power by:* applying a set of techniques to produce the specified outcome

For example:The learner creates the brochure following the specifications listed in Resource A.* selecting appropriate software and features to manage and present information

For example, the learner:* + produces the brochure using at least two software applications that are appropriate for the outcome (e.g. Microsoft Word and Microsoft Excel)
	+ inserts/deletes rows and columns as required and enters and calculates (add, subtract, multiply, divide, or obtain sum, minimum, maximum, average) numerical data using mathematical formulae.
* applying file management procedures

For example, the learner:* + applies some file management procedures (such as maintaining backups). The information brochure is saved using a suitable name (e.g. solarmc\_information\_brochure.docx) along with other associated files in a folder with a name that identifies them.
* applying appropriate design elements and/or formatting techniques

For example:For spreadsheet software, the learner:* + formats text (font, bold, italics, size, and so on) so that it is readable and suitable for purpose; formats numbers appropriately, considering the data type (e.g. money) and accuracy required by the context; sizes and aligns cells (e.g. height, width, align, split, merge); sorts, selects and graphs information.

For word processing software, the learner:* + selects, applies, and adjusts fonts, margins, line spacing, and tabs; creates tables, columns, borders and shading, and headers and footers
	+ creates an outcome that resembles their design concept through manipulating design elements such as alignment, contrast (through font selection, style, size, colour, shading, reverse text, drop caps), repetition (of fonts, heading treatments, colour), proximity (main heading, subheadings, paragraphs), balance (placement of blocks of text, use of white space, column breaks), harmony (through font selection, colour treatment, graphics and text).
* applies data integrity and testing procedures to ensure the outcome meets the specifications

For example, the learner:* + sets the text out in a way that considers the principles of page layout, for instance, white space is well used. Headings break up the text into understandable paragraphs about solar power and the information is presented using bullet points and subheadings to display the information about why people should consider installing solar power
	+ uses formulae to calculate the yearly savings of power and uses sum to calculate the total savings
	+ formats parts of the spreadsheet about solar power usage so that it can be inserted into the Information sheet. A graph is included that compares 5% cost increases to 10%. The graph has a title, legend, and only shows the correct information
	+ checks that the outcome meets all of the specifications such as 2 to 4 A4 page equivalents
	+ uses print preview and actual printouts to check that graphs are displaying correctly. Formula calculations are spot checked using a calculator
	+ prints draft copies and annotates any changes that need to be made and then makes them. There may be some minor errors such as spelling.
* meets appropriate legal, ethical, and moral requirements

For example:The learner identifies the sources of their information and checks that all content complies with copyright or privacy legislation. The learner documents and references this information using the correct conventions.*The above expected learner responses are indicative only and relate to just part of what is required.* | The learner skilfully implements basic procedures to produce an information brochure about the benefits of solar power by:* showing accuracy in applying techniques and testing procedures

For example, for spreadsheet software, the learner accurately:* + produces charts that are readable, accurate in terms of calculations, and appropriately labelled.

For word processing software, the learner accurately:* + selects fonts that are appropriate for the purpose (e.g. those used for headings, subheadings, and content have a logical, hierarchal structure)
	+ customises margins to the needs of the document
	+ sets appropriate line spacing (e.g. the space before and after headings and paragraphs)
	+ ensures that text spacing is appropriate (e.g. condensed or expanded)
	+ sets appropriate paragraph styles (e.g. block or indented)
	+ sets suitable tabs and align any decimal points to enhance the appearance and readability of numbers
	+ ensures that any Word tables display as appropriate, attending to cell dimensions, internal margins, borders and shading, alignment, and autofit
	+ structures the document logically, using appropriate columns and breaks
	+ ensures there are no orphan headings or lines
	+ ensures that borders and shading display correctly when printed
	+ ensures that information in headers/footers displays correctly (e.g. in terms of pagination, placement, style, size, and alignment).
* shows independent decision making when applying techniques and testing procedures

For example, the learner independently:* + creates the information brochure using two software applications by following the instructions
	+ decides on and makes effective use of formatting features and a range of design elements
	+ independently reviews and tests aspects of the brochure to test its functionality
	+ checks calculations to ensure data integrity, checks graphs and tables to ensure that they display appropriately, proof reads to ensure errors are eliminated and that no text is missing or in the wrong place, and checks for consistent use of styles (for headings, subheadings, bullets etc.)
	+ checks all of the specifications given in Resource A are included
	+ prints draft copies and annotates any changes that need to be made and then makes them
	+ applies file management procedures (such as maintaining backups). The information brochure is saved using a suitable name (e.g. solarmc\_information\_brochure.docx) along with other associated files in a folder with a name that identifies them.
* meets relevant legal, ethical, and moral requirements

For example:The learner identifies the sources of their information and checks that all content complies with copyright or privacy legislation. They document and reference this information using the correct conventions.*The above expected learner responses are indicative only and relate to just part of what is required.* | The learner efficiently implements basic procedures to produce an information brochure about the benefits of solar power by:* independently and accurately undertaking techniques and procedures in a manner that economises the use of time and resources

For example, the learner accurately and independently:* + creates a well-structured, fit-for-purpose document using at least two software applications. They use efficient methods rather than trial and error (e.g. when setting tab stops, margins, or bullets) and make effective use of pagination, paragraphing, page breaks, and continuous breaks
	+ enters text and other data using efficient fingering and keyboard shortcuts
	+ uses spreadsheet software effectively to create graphs (e.g. using the most efficient formulae and labour-saving autofill and labelling options)
	+ is familiar with a wide range of relevant techniques, procedures, and design elements and uses these to implement their design concept (e.g. they quickly choose a pie graph to show percentages), selecting labelling, customising alignment, font size, and colour, and placing text to ensure maximum readability and usability. Their choice of colours is appealing and harmonises with other visual elements in the brochure
	+ uses formatting to engage and support the reader by, e.g. ensuring consistency in the layout
	+ uses efficient file-management procedures (e.g. folders and files are named systematically and logically and the file name and pathway are inserted in the footer of the brochure)
	+ the brochure is functional, suited for the intended audience, and easy to read and digest. If intended for online viewing, the brochure is saved in alternative formats (such as .doc and .pdf)
	+ efficiently reviews and tests the data for completeness and accuracy (e.g. they check the results of formulae using a calculator)
	+ checks all the documents to ensure there are no errors. Documents meet all of the specifications given in Resource A
	+ prints minimal draft copies and annotates any changes that need to be made and then makes them. There are no errors
	+ creates the information sheet without using trial and error and uses the space available so that minimum paper and toner is used.

The learner requires no reminding to get on with the work and finds faster ways to complete the information sheet. The learner uses the best tools from inside the software to create the information sheet.* meets relevant legal, ethical, and moral requirements

For example:The learner identifies the sources of their information and checks that all content complies with copyright or privacy legislation. They document and reference this information using the correct conventions.*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.