**NZQA**

**Approved**

Achievement standard: 91342 Version 3

Standard title: Develop a product design through graphics practice

Level: 2

Credits: 6

Resource title: Handle design

Resource reference: Design and Visual Communication VP-2.35 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-02-2015-91342-02-8152 |
| 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 produce a portfolio of design work, through graphics practice that shows the development of design ideas for a range of handles for a new range of upmarket furniture.

You are going to be assessed on how effectively you develop the design of a range of handles through graphics practice. You need to review and refine well-considered design ideas that integrate knowledge about handle design and construction.

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

The design brief is to design a new range of handles for a range of upmarket furniture. Provide a pattern/mould so that the handles can be constructed. Your client, for example the manager of the furniture company, may provide you with further specifications.

Specifications could include:

* ease of use of the handles
* possibility of focus on a user that has a disability
* style and aesthetic look of the handles
* durability and ease of manufacture
* cost of each unit to manufacture.

Select and apply drawing and design knowledge and techniques to visually communicate the exploration, refinement and review of your design ideas throughout a development process.

Focus on the product (handles) and technical considerations associated with designing the handles, together with relevant design principles.

Compiling your portfolio involves three phases, initial research, initial ideas, ideas development.

Throughout the process evaluate the positive and/or negative aspects of the functional and aesthetic features of your design ideas in relation to the brief.

To show the progression of your design ideas, you could include visual diaries, sketches, mock-ups, drawings, models, photographs, digital media, display boards or installations. You can support these with annotations (notes) as needed.

Consider each handle’s:

* aesthetic elements (for example style, form, shape and colour) compared with the aesthetics of other handles generally
* functional elements (for example ergonomics, construction, fit, durability and user-friendliness) as to how it might be used in the selected environment.

## Part 1: Initial research

Collect images (photographs and drawings) of existing handles from magazines, the internet, books, or existing designs.

Consider and make design judgements on the positive and/or negative aspects of the functional and aesthetic design features of these handles.

## Part 2: Initial ideas

Develop a range of initial ideas for your range of handles using sketches and/or mock-ups. The inspiration for your ideas can come from any source, for example initial research, other designs you have or may have seen, the specific context you are designing for or your own creative ideas.

Treat the sketches or models you produce as starting points for possible development. At this stage all ideas are exploratory.

## Part 3: Ideas development

Identify your best idea/s for further development. You may prefer a particular idea, or parts or combinations of several ideas. Explain your choices.

Integrate design knowledge into your design ideas throughout the development. This knowledge includes (but is not limited to):

* design tools and technical knowledge of materials
* construction and structures
* mechanisms
* ergonomics
* product visual communication techniques
* fit/durability.

In developing, reviewing and refining your well-considered design ideas using graphic practice, you need to do the following:

* Refine and conclude the relevant aesthetics and functional design features of the handles. The development of the ideas should be logical, related to research and linked to the initial ideas.
* Support your judgements with qualitative and/or quantitative data gathered through continuing research, as needed. This may include market research, anthropometrics, ergonomics, models, mock-ups, technical knowledge of materials, product design drawings, prototypes, industry specific information, etc. Judgements may also reflect your own values, tastes, views or perspective.
* Make notes explaining the basis for the design ideas and give reasons for the decisions you make.

Make sure the features of your final design outcome are clearly established and identified at the conclusion of your development work.

When you submit your completed portfolio for assessment, make sure it includes all the visual and written work required.

Throughout the design development process make sure you:

* review and refine well-considered design ideas for the handle design
* show that you have integrated product design knowledge through the development of ideas for the handle design
* effectively develop design ideas through graphics practice
* show linkages and flow from the exploration, through the refinement (i.e. the detailing of the ideas and how it will solve the design problem posed)
* use product design knowledge such as design tools, technical knowledge of materials etc. and product visual communication techniques, for example, prototypes, animations
* make design judgements that are based on relevant features of the design
* consider the aesthetics (the way it looks) and function (the way it works).

There could be evidence of computer modelling/mock-up etc. of the design to validate ergonomics and usability requirements.

# Resources

These websites may be useful:

[www.youtube.com/watch?v=-a\_v79z25wo](http://www.youtube.com/watch?v=-a_v79z25wo)

[www.ergonomics.uq.edu.au/eaol/handle.pdf](http://www.ergonomics.uq.edu.au/eaol/handle.pdf)

[www.technologystudent.com/despro\_fish/handle1.html](http://www.technologystudent.com/despro_fish/handle1.html)

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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 produce a portfolio of design work using graphics practice that shows the effective development of a design idea for a new range of handles for an upmarket range of furniture.

# Conditions

Learners need to work individually.

# Resource requirements

Learners need access to product design knowledge for handles. This could be found in product design books and through local designers/experts and the internet.

# Additional information

Check learners’ work during the assessment task as they work towards an outcome. These checks could be at key stages of the process or other appropriate points.

Give learners feedback during their portfolio work.

# Assessment schedule: Design and Visual Communication 91342 – Handle design

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| Evidence/Judgements for Achievement | Evidence/Judgements for Achievement with Merit | Evidence/Judgements for Achievement with Excellence |
| The learner develops a product design for a new range of handles for an upmarket range of furniture through graphics practice by:   * exploring and refining design ideas that draw on product design knowledge * making design judgements on the positive and/or negative aspects of the functional and aesthetic features of the design in response to the brief * supporting design judgements with qualitative and/or quantitative data gathered through research   For example:  When developing their handle design ideas, the learner shows the following:   * + exploration and refinement of the handle’s form, function and style – drawing on knowledge of suitable construction methods and materials   + understanding of both the positive aesthetic and functional aspects and/or negative aesthetic and functional aspects of their design.   The learner made design decisions and judgements on these positive and/or negative functional and aesthetic features of the design.  The design is static (i.e. it does not necessarily show how the handle interacts with the user or environment that it would be used in).  *The above expected learner responses are indicative only and relate to just part of what is required.* | The learner clearly develops a product design for a new range of handles for an upmarket range of furniture through graphics practice by:   * exploring, reviewing and refining design ideas that incorporate product design knowledge * making design judgements on the relevant aesthetic and functional design features, in response to the brief, that inform the progression of the design ideas * supporting design judgements with qualitative and/or quantitative data gathered through research   For example:  When developing their handle design ideas, the learner shows the following:   * + exploration, review and refinement of the handle’s form, function and style – incorporating knowledge of suitable construction methods and materials   + understanding of both the positive aesthetic and functional aspects and/or negative aesthetic and functional aspects of their design   + understanding of how these aesthetic and functional elements are used in their design.   The learner made design decisions and judgements on the relevant positive and/or negative functional and aesthetic features of the design.  The product design knowledge has been incorporated in the development of the ideas, i.e. there is technical information which communicates construction details such as how it is attached to the furniture, how a disabled person might interact with it and any electronic features which make the handle easier to use. A pattern or mould has been communicated which clearly shows construction details.  *The above expected learner responses are indicative only and relate to just part of what is required.* | The learner effectively develops a product design for a new range of handles for an upmarket range of furniture through graphics practice by:   * exploring, reviewing and refining well-considered design ideas through graphics practice that integrate product design knowledge throughout the development * making design judgements on the relevant aesthetic and functional design features, in response to the brief, that inform the progression of the design ideas * supporting design judgements with qualitative and/or quantitative data gathered through research   For example:  When developing their handle design ideas, the learner shows the following:   * + exploration, review and refinement of the handle’s form, function and style – integrating knowledge of suitable construction methods and materials   + understanding of both the positive aesthetic and functional aspects and/or negative aesthetic and functional aspects of their design   + understanding of how these aesthetic and functional elements are used in their design.   The learner made design decisions and judgements on the relevant positive and/or negative functional and aesthetic aspects of the design.  The product design knowledge has been integrated into the development of the well-considered ideas, i.e. there is detailed technical information which communicates the construction and material requirements.  The design replicates how the design is used and interacts with the environment and users.  *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.