



National Certificate of Educational Achievement
TAUMATA MĀTAURANGA Ā-MOTU KUA TAEA

Exemplar for Internal Achievement Standard Design and Visual Communication Level 3

This exemplar supports assessment against:

Achievement Standard 91630

Resolve a product design through graphics practice

An annotated exemplar is an extract of student evidence, with a commentary, to explain key aspects of the standard. It assists teachers to make assessment judgements at the grade boundaries.

New Zealand Qualifications Authority

To support internal assessment

	Grade Boundary: Low Excellence
1.	<p>For Excellence, the student needs to effectively resolve a product design through graphics practice.</p> <p>This involves:</p> <ul style="list-style-type: none">• making informed designer decisions that integrate product design knowledge, and understanding of the wider environmental conditions and human factors related to the design context• communicating a product design that is justified in terms of the significant opportunities and constraints. <p>This student has researched existing modern lighting design and analysed the relevance for their own context of a desk lamp (1). The conceptual ideas and design development express and integrate product design knowledge of shape and form, function, fixtures, fittings, assembly detail (2) and some understanding of environmental and human factors as ergonomic related issues (3).</p> <p>There are good levels of visual communication which clarify design thinking which assists the student's ability to express informed designer decisions (4) and justify reasons for design decisions with annotations referring to opportunities and constraints (5).</p> <p>For a more secure Excellence, the student could show further understanding and integration of wider environmental conditions and human factors. The significant opportunities and constraints could have been justified further by including, for example, scaled plans of the desk space, location of the lamp, how the light could be diffused and research on optimal lighting (lux) levels for a study environment.</p>

Student 1: Low Excellence
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Brainstorm

Possible Scenario

1. A person who has a desk lamp that is not adjustable and is not portable.

2. A person who has a desk lamp that is not adjustable and is not portable.

3. A person who has a desk lamp that is not adjustable and is not portable.

1

Roughed out Brief

Client: I want to be able to adjust the height of my desk lamp so I can use it for reading or for working.

Subject: A desk lamp that is adjustable in height and is portable.

Function: To be able to be used as a desk lamp or as a portable lamp.

Requirements:

- Adjustable in height
- Portable
- Easy to use
- Easy to store
- Easy to transport
- Easy to assemble
- Easy to disassemble
- Easy to repair
- Easy to upgrade
- Easy to customize
- Easy to personalize
- Easy to match
- Easy to coordinate
- Easy to blend
- Easy to harmonize
- Easy to complement
- Easy to enhance
- Easy to improve
- Easy to upgrade
- Easy to modernize
- Easy to update
- Easy to refresh
- Easy to revitalize
- Easy to rejuvenate
- Easy to renew
- Easy to restore
- Easy to refurbish
- Easy to refinish
- Easy to refit
- Easy to refit
- Easy to refit
- Easy to refit

Final Brief

Objective: To design a desk lamp that is adjustable in height and is portable.

Requirements:

- Adjustable in height
- Portable
- Easy to use
- Easy to store
- Easy to transport
- Easy to assemble
- Easy to disassemble
- Easy to repair
- Easy to upgrade
- Easy to customize
- Easy to personalize
- Easy to match
- Easy to coordinate
- Easy to blend
- Easy to harmonize
- Easy to complement
- Easy to enhance
- Easy to improve
- Easy to upgrade
- Easy to modernize
- Easy to update
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- Easy to refit
- Easy to refit
- Easy to refit
- Easy to refit

Research

1

Concepts

2

Concepts

Concepts

1

Development

4

Development

3

Development

3

Development

5

Development

2

FINAL DESIGN

	Grade Boundary: High Merit
2.	<p>For Merit, the student needs to clearly resolve a product design through graphics practice.</p> <p>This involves:</p> <ul style="list-style-type: none">• exploring the wider environmental conditions and human factors related to the design context to identify opportunities and constraints• communicating a product design that addresses significant opportunities and constraints. <p>The student chose to design a chair, influenced by Oscar Niemeyer. The research is connected to the analysis of the context (1). Some wider environmental conditions have been explored in the research and design development (2). The chair design is both creative and unique and significant constraints and opportunities have been explored with shape, form and ingenuity (3).</p> <p>To reach Excellence, there would need to be further evidence of justifying how the chair was addressing the more significant opportunities and constraints such as wider environmental and human factors, the manufacturing detail required to make a complex piece of furniture, and ensuring a robust and durable design. It is expected that the exploration and refinement also address the wider environmental conditions and human factors.</p>

Student 2: High Merit
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North Contemporary Art Museum
 Oscar Niemeyer, 1997

Time Line of Major Events and Projects

Architects Chair Investigation

Chair Name: Architects Chair

Chair Niemeyer, 2006

Influences: Oscar Niemeyer, 1997

Impact: I put up my pen. A building appears!

Architects Chair Investigation

North Contemporary Art Museum
 Oscar Niemeyer, 1997

Time Line of Major Events and Projects

Architects Chair Investigation

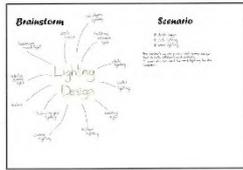
Architects Chair Concepts

Architects Chair Concepts

Architects Chair Development

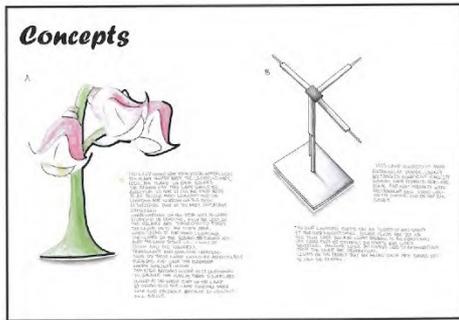
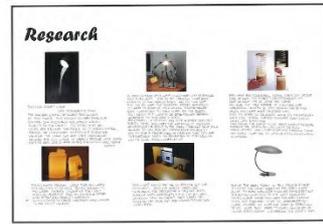
	Grade Boundary: Low Merit
3.	<p>For Merit, the student needs to clearly resolve a product design through graphics practice.</p> <p>This involves:</p> <ul style="list-style-type: none">• exploring the wider environmental conditions and human factors related to the design context to identify opportunities and constraints• communicating a product design that addresses significant opportunities and constraints. <p>This student chose to design an efficient and aesthetically pleasing desk light. There is some analysis of the design context in the research (1) to identify opportunities and constraints (2). The student is beginning to consider the wider environmental conditions and human factors by visually communicating desk layout and proportion (3).</p> <p>To move towards a more secure Merit the student would need to strengthen the resolved nature of the final design. For example, the student could show scaled drawings, parts and assembly views that indicate fixtures, fittings and materials. Wider factors relating to the lighting environment and the human/product interface would need to be explored.</p>

Student 3: Low Merit
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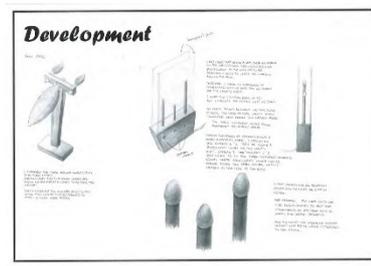
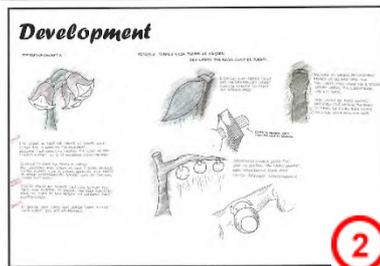
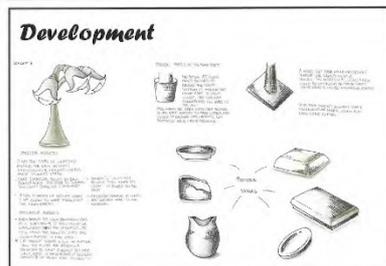
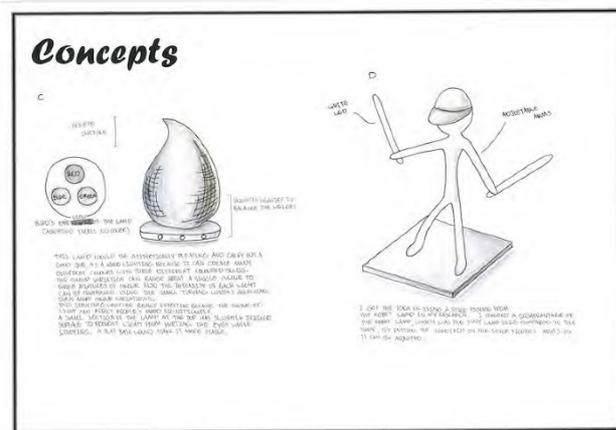


Rough Brief
 Objective: To design a desk lamp that is aesthetically pleasing and functional.
 Problem: The current desk lamp is outdated and does not provide adequate lighting.
 Solution: A modern desk lamp with adjustable lighting and a sleek design.
 Requirements: The lamp must be functional, aesthetically pleasing, and easy to use.
 Constraints: The lamp must be made of high-quality materials and be durable.

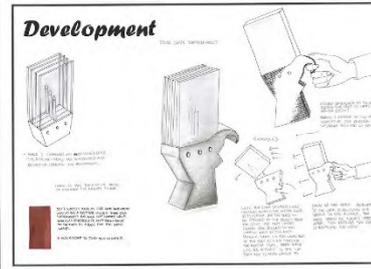
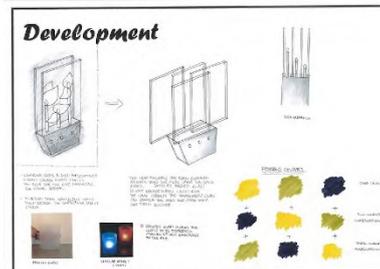
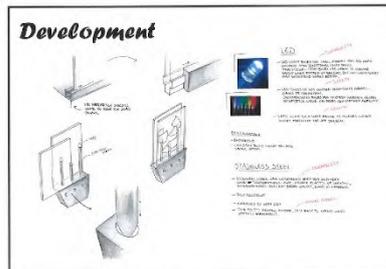
Final Brief
 Objective: To design a desk lamp that is aesthetically pleasing and functional.
 Problem: The current desk lamp is outdated and does not provide adequate lighting.
 Solution: A modern desk lamp with adjustable lighting and a sleek design.
 Requirements: The lamp must be functional, aesthetically pleasing, and easy to use.
 Constraints: The lamp must be made of high-quality materials and be durable.



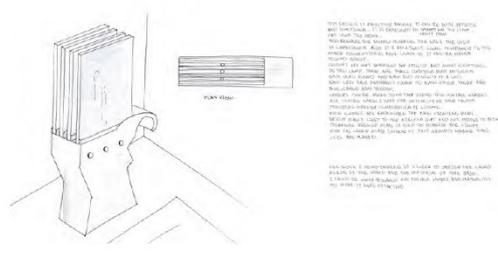
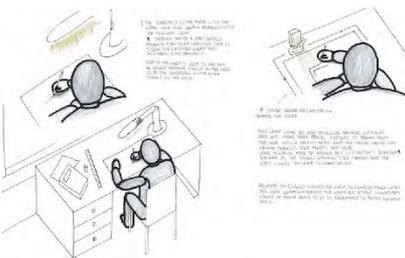
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2



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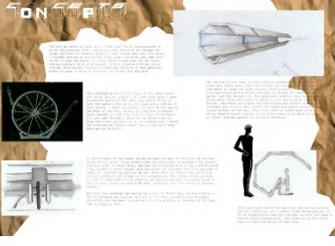
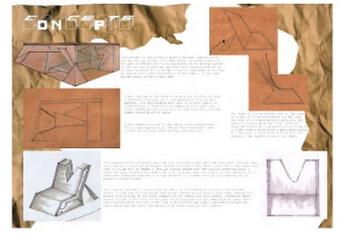
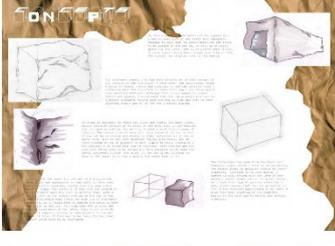


	Grade Boundary: High Achieved
4.	<p>For Achieved, the student needs to resolve a product design through graphics practice.</p> <p>This involves:</p> <ul style="list-style-type: none">• exploring and refining design ideas based on an analysis of the design context (including opportunities and constraints) and understanding of product design knowledge• communicating a product design that addresses identified opportunities and constraints. <p>The student chose to design a 'bike bar' - a place where cyclists can remain on their bikes and eat, drink and/or gather as a group. The student has chosen a range of contemporary designers (1) as sources of inspiration, and this contributes to the analysis of the design context (2). Analysis of the context gains strength in the development of the ideas (3). There are good levels of visual communication which explore form and show some understanding of product design knowledge (4).</p> <p>To reach Merit, the exploration of ideas would need to consider wider environmental conditions. These could be location and human factors such as further ergonomic studies. The design idea is very conceptual and for this standard, further resolution of size, scale, construction and assembly detail would be required.</p>

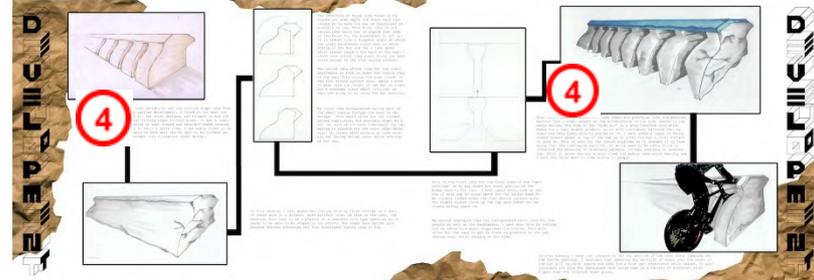
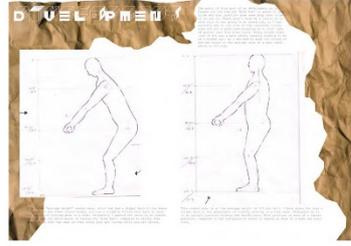
Student 4: High Achieved
 NZQA Intended for teacher use only



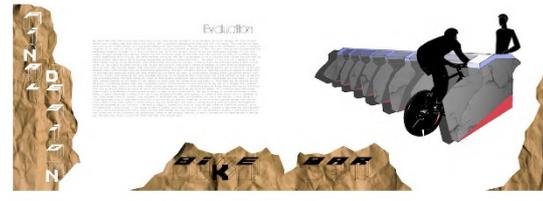
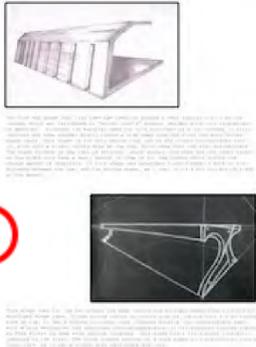
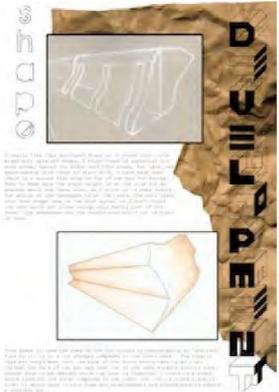
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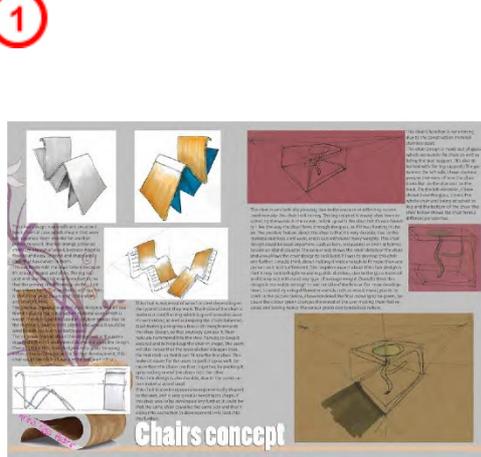


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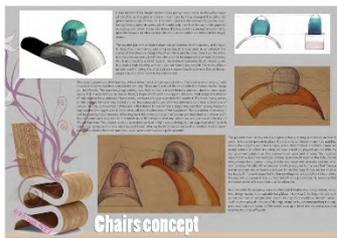
	Grade Boundary: Low Achieved
5.	<p>For Achieved, the student needs to resolve a product design through graphics practice.</p> <p>This involves:</p> <ul style="list-style-type: none">• exploring and refining design ideas based on an analysis of the design context (including opportunities and constraints) and understanding of product design knowledge• communicating a product design that addresses identified opportunities and constraints. <p>The student chose to design a chair inspired by a range of influential designers and products (1). There is good analysis of the design context in the research (2). The student explores shape and form with continued analysis of opportunities and constraints (3). There is some refinement and resolution of ideas (4).</p> <p>For a more secure Achieved, the student would need to show further evidence of product design knowledge such as how the chair is assembled. The student could move beyond just producing conceptual shape and form in the final design to providing further visual communication of fixtures, fittings and assembly details.</p>

Student 5: Low Achieved
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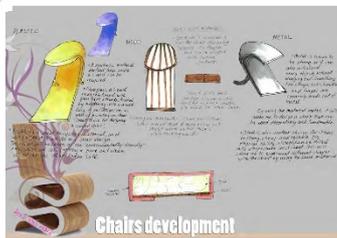


1

2



3



4



	Grade Boundary: High Not Achieved
6.	<p>For Achieved, the student needs to resolve a product design through graphics practice.</p> <p>This involves:</p> <ul style="list-style-type: none">• exploring and refining design ideas based on an analysis of the design context (including opportunities and constraints) and understanding of product design knowledge• communicating a product design that addresses identified opportunities and constraints. <p>The student chose to design mood lighting for a stakeholder. The research begins to analyse the context (1) and explores shape and form to reasonable levels (2) and there is some analysis of the design context seen in the student's annotation and visual communication (3).</p> <p>To reach Achieved, the work needs to demonstrate a more relevant design focus. There would need to be further evidence of the resolution of the design ideas, such as scaled assembly detail of the components and strengthening of the visual communication used throughout the development of the design ideas.</p>

Student 6: High Not Achieved
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Research

Concepts

A The way this design is represented makes it very difficult to see the shape of the design. The slope of the design will probably be a very gradual upward slope. The slope over size of the design probably will be the most important part of the design. The slope is important as the design will probably be the most important part of the design.

B The way this design is represented makes it very difficult to see the shape of the design. The slope of the design will probably be a very gradual upward slope. The slope over size of the design probably will be the most important part of the design. The slope is important as the design will probably be the most important part of the design.

The main problem with the design is the way it has been represented. The slope of the design is only marginally better than the rest of the design. The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

Research

Lighting is as important in a building as the structure. Achieving the right balance is key.

Lighting is an essential part of any building. It not only provides illumination but also sets the mood and atmosphere. The design of a building's lighting system is a critical part of the overall design process. It involves a combination of architectural and electrical engineering to create a functional and aesthetically pleasing environment.

The design of a building's lighting system is a critical part of the overall design process. It involves a combination of architectural and electrical engineering to create a functional and aesthetically pleasing environment.

Research

The concept behind being to use light to create a sense of depth and to highlight the features of the design. The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

Development

WINDOW PARTS

GLAZING TYPE

GLAZING TYPE

GLAZING TYPE

Development

1

The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

Development

The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

Development

2

The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

Development

The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

Research/Development

3

The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

Development

The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

Final Base

This is where I would place my final design. The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

Development

The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.

The design is not particularly stable. The design is not particularly stable. The design is not particularly stable.