

# 2015 NCEA Assessment Report

Design and Visual Communication Level 2 91337, 91338, 91339

## Report on standards

### 1. Assessment Report for 91337: Use visual communication techniques to generate design ideas

<p><b>Achieved</b></p>	<p>Candidates who were assessed as Achieved commonly:</p> <ul style="list-style-type: none"> <li>presented their design ideas using visual communication techniques: most common technique was sketching that included 2D and 3D</li> <li>used as a digital form of communication, Sketch Up printouts along with some use of photographed mock-ups, in support of their sketching</li> <li>communicated functional qualities through visual means; most commonly using 2D and 3D sketches; these included cross-sections and detailed drawings to indicate construction</li> <li>communicated aesthetic qualities that indicated shape, form and material finish using modes that varied from pencil rendering to use of marker pens</li> <li>demonstrated an ability to communicate ideas using techniques and principles of visual communication (e.g. basic line work, rendering, proportioning) that showed design features</li> <li>generated different ideas that were predictable and / or similar to the researched solutions gathered.</li> </ul>
<p><b>Not Achieved</b></p>	<p>Candidates who were assessed as Not Achieved commonly:</p> <ul style="list-style-type: none"> <li>presented their ideas using poorly executed visual communication techniques; predominantly sketching was out of proportion and lacked identifiable design qualities</li> <li>failed to produce sufficient evidence to show how their design functioned in terms of operation, fit for use or construction</li> <li>displayed aesthetic qualities that were poorly applied</li> <li>produced evidence that was incomplete or lacking the demonstration of more than a single idea.</li> </ul>
<p><b>Achieved with Merit</b></p>	<p>Candidates who were assessed as Achieved with Merit commonly:</p> <ul style="list-style-type: none"> <li>presented their ideas using visual communication techniques that were skilfully applied; most commonly presented technique were well proportioned sketches including 2D, 3D, sectioning and exploded views</li> <li>communicated functional qualities with clarity, showing how the design was to work, e.g. how the product being designed was intended to be used or how the product fits into the hand</li> <li>communicated aesthetic qualities with clarity; generally this was limited to colour, texture, tone, shape, form and surface finish</li> <li>used a variety of different views to fully express the qualities of the design from different angles and internally</li> <li>demonstrated an ability to show divergent thinking, producing a range of possible ideas using different generative strategies (e.g. mock-ups, research inspired ideas, concept generation, creative experiments with forms and shapes)</li> <li>produced diverse design ideas that clearly showed identifiable design qualities, which tended to be primarily aesthetic in nature.</li> </ul>
<p><b>Achieved with Excellence</b></p>	<p>Candidates who were assessed as Achieved with Excellence commonly:</p> <ul style="list-style-type: none"> <li>applied visual communication techniques that were appropriate to what they were trying to communicate and executed these to a high standard that lead to the effective communication of their design thinking</li> <li>clarified comprehensively, the functional and aesthetic details of the design in depth and with clarity so as to demonstrate a full understanding of the inner working of the design</li> <li>extended their design thinking through the on-going exploring and manipulation of their ideas visually in a manner that is informed within the design context.</li> </ul>

**Standard specific comments**

The types of visual communication techniques observed were predominantly rendered freehand sketches although there has been an increase in the use of digital work to generate different conceptual ideas, predominantly Google SketchUp. Candidates that have mastered this programme were able to use this effectively to present their design thoughts.

Also presented were photographs, overlays, collage and the use of photographed models and mock-ups. A number of candidates used functional models as a form of testing the shape and form of their design; these were generally presented as a series of photos showing what was being tested. These could be better integrated into the process and used to develop the design further. Candidates that were able to make judgements as to the best way to view a design and then choose the most suitable technique to use to explain how it might work and look, then went on to explore their design ideas in detail and clarity that supported clear and coherent design thinking often achieved at the higher levels. These were often detailed sketches, skilfully and effectively presented.

Divergent thinking often occurred as a result of candidates being given briefs that allowed them the opportunities to be innovative, allowing them to design more interesting and creative ideas. This then allows the candidate to explore and extend their ideas towards more refined solutions, allowing them to reflect on and introduce new aspects / ideas / thinking as they progressed. Highly utilitarian design briefs can limit the creative responses a candidate can arrive at and therefore restricting their ability to achieve at the higher levels. Those that stuck to a more linear approach found it more difficult to extend their design ideas.

There were an increased number of candidates using ideation and design influences in the initial stages of their design concepts. Those candidates that used these influences in their designs usually arrived at more interesting and divergent ideas and tended to achieve well. However a good number of candidates produced a number of pages showing ideation and design influences and then failed to take any of these influences into their own initial designs, this limited their ability to arrive at more interesting solutions. Some candidates tended to look at existing examples of designs directly related to a context, they generally ended up with design solutions very similar to those they started with, and this limited their ability to arrive at more interesting and divergent ideas.

Functional qualities generally limited the candidate's ability to achieve at the higher levels. Those candidates that did achieve at the higher levels were able to expand their ideas to show more detail of how things worked or were to be constructed; these were often enlarged sketches, either sectional, exploded or 3D sketches that allowed functional details to be shown more comprehensively.

Aesthetic qualities were generally applied with clarity. Candidates in most cases could apply colour, tone, texture and surface finish competently. This was often done with coloured pencils with an increased number of candidates becoming more confident in the use of marker pens. Candidates that simply coloured their ideas or applied little in the way of aesthetics were limited in their success.

Work presented in the area of Spatial design was stronger this year with candidates presenting work that showed an improved understanding of how buildings functioned. Relationship between rooms – flow and movement, internal room layouts, environmental considerations relating to the site, consideration of exterior roof design and material selection were communicated using both 2D and 3D sketches and drawings, both internally and externally. Designs varied from – simple container housing to large common rooms. Candidates should be reminded that it's not about the complexity of the design it's about exploring and effectively communicating an innovative, creative design solution that shows diversity with clarity and a depth of understanding.

Candidates producing evidence in the area of product design generally achieved well as they found it easier to understand and explore both the functional and aesthetic qualities of the design. Candidates often used hands or figures to gauge the scale and proportion of the product then produced construction details to show how a product worked. The choice of design brief here is crucial so as to allow the candidate to arrive at creative diverse responses.

	<p>There was a range of technology work however predominantly this comes from textiles candidates. Most candidates could show design ideas but these were often limited to just 2D sketches. This was generally in the form of the dress model 2D format and repeated the same form throughout the design process without exploring other methods of communicating ideas or detailing. Functional qualities were generally limited to just a few small 2D and sometime 3D sketches of how the design may be assembled. This is not enough to achieve at the higher levels. Candidates that considered the functional aspects of their design visually and explored these fully through detailed sketches and modelling achieved with success. The aesthetic qualities of the designs were often well presented. Candidates used a combination of pens, pencils or marker pens and in some cases collage to show texture, pattern and finish.</p> <p>Some candidates continued to submit research, particularly work on a design era and non-related internal work. This should be removed. This includes work in visual diaries. For this standard all that is required is the work that shows the candidate’s visual communication techniques to generate ideas.</p> <p>Design ideas must be, candidate generated responses to design briefs.</p>
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## 2. Assessment Report for 91338: Produce working drawings to communicate technical details of a design

<b>Achieved</b>	<p>Candidates who were assessed as Achieved commonly:</p> <ul style="list-style-type: none"> <li>demonstrated an ability to produce a set of interconnected 2D instrumental working drawings to show technical details ; most commonly this involved a plan, elevations and clearly related cross-section</li> <li>showed the use of recognised drawing conventions appropriate to the drawings being produced, e.g. labelling, scale, basic line types – construction lines, outlines, section lines.</li> </ul>
<b>Not Achieved</b>	<p>Candidates who were assessed as Not Achieved commonly:</p> <ul style="list-style-type: none"> <li>produced a set of interconnected drawings that did not show enough technical details about the design; the most common example was a working drawing of a product that contained a plan or top view, end elevation and a sectional view that lacked any technical details of distinct parts and their assembly</li> <li>produced drawings that were not interconnected; in other words lacked information that connected one drawing to the next or drew drawings that were not relevant and useful in communicating details of the design.</li> </ul>
<b>Achieved with Merit</b>	<p>Candidates who were assessed as Achieved with Merit commonly:</p> <ul style="list-style-type: none"> <li>produced a set of interconnecting 2D instrumental working drawings that clearly communicated technical details of the design. Drawings clearly showed construction information or complex detailing that related to the design</li> <li>produced drawings that were skilfully and accurately drawn</li> <li>demonstrated good skills in applying drawing conventions appropriately to the drawing type being presented.</li> </ul>
<b>Achieved with Excellence</b>	<p>Candidates who were assessed as Achieved with Excellence commonly:</p> <ul style="list-style-type: none"> <li>produced a set of drawings that communicated the technical details of their design effectively and were presented to a high standard using appropriate conventions</li> <li>produced drawings that were consistently accurately drawn and included information and details so as to clearly understand the design. Drawings often included sectional views, with enlarged details, which allowed the design to be effectively communicated.</li> </ul>

**Standard specific comments**

This standard is about producing a set of related two-dimensional instrumental working drawings that show one's own design decisions. These drawings must communicate technical details of the design's shape and form and must show complex visual information using conventions that are associated with the type of drawing being produced.

Schools that teach 2D working drawings and encourage quality drawing skills supported by the use of conventions have done well. This year saw an increased number of 3D drawings supporting the working drawings. These are not needed. It must be remembered that this standard is about producing working drawings. Working drawings are a set of related 2D drawings.

Working drawings need to have an element of complexity. Simple designs that included a plan, elevations and a cross-section often lacked the detailing that clarifies the workings and or construction of the design. Often all that needs to be added to these drawings is some technical detailing (e.g. enlarged construction details or parts, and / or assembly) to increase the clarity and complexity of the design and therefore making it a more complete set of related drawings.

Those candidates that achieved well, produced a coherent set of working drawings that were accurate and showed quality drawing skills including conventions that were appropriate to the type of drawing produced. The views were correctly scaled, used symbols to indicate sectioning and details were clearly labeled and referenced to each other.

The importance of relating the set (linking) of drawings using conventions is crucial in communicating complex and technical information in order to inform all supporting drawings.

Architectural drawings often included a plan drawn to 1:100 or 1:50 scale which showed benches, baths, showers and fittings which clearly indicates the function of the rooms. Two or even four elevations were drawn to a scale of 1:100 or 1:50, these views often indicating the materials used, these were usually supported with a cross-section at 1:50, and one or two enlarged details drawn to a scale of 1:10 or 1:5. A few candidates presented cross sections at 1:20 which allows more complex visual information to be shown clearly without drawing enlarged details. For architectural work to achieve well candidates must relate their drawings, in many cases this is as simple as placing a north symbol on the plan view and referencing this to the elevations. Candidates who failed to reference their drawings to one another or label their views were restricted in their achievement levels.

An increased number of candidates presented their working drawings using CAD. It was pleasing to see that there is an improved understanding of how to use this software. Although CAD work was seen across all areas, it was predominantly used within architectural designs.

In a number of architectural designs, candidates produced plans, elevations and cross-sections, often the cross-sections was drawn at a 1:50 scale supported by larger construction details which were drawn to a 1:10 or 1:5 scale. Some candidates simply enlarged what they had drawn at the 1:50 scale, which did not add any extra constructional information to the detail and therefore limited their success. In some cases these details were imported from architectural component libraries, e.g. a foundation detail or windows details to show clearly the construction details for their own design. This is fine and those that did this successfully usually achieved well although some candidates imported details that did not relate to their design, e.g. the cladding, materials or construction shown in the detail did not relate to that shown in their own design. In these cases candidates could only achieve at the lower levels. Drawings and details must relate to the candidate's own design.

Candidates using CAD must be aware when printing their drawings to check the settings on the computer to avoid drawings not printing out accurately to scale, again this prevented candidates achieving at the top level – this is possibly the result of candidates choosing to re-size their drawings or printing to page without checking the settings. Line work was also an issue; candidates must use the correct line tools, often lines were drawn too thick and in some cases the technical detailing was not clearly communicated.

There were fewer candidates producing auxiliary views. Those that used this technique

	<p>successfully produced true shapes of sloping surfaces, which assisted in reading the drawing. Those candidates that simply drew an Auxiliary view that add no additional information had limited success.</p> <p>When producing working drawings, either with CAD or instruments, candidates should be encouraged to use standard scales, e.g. 1:100, 1:50, 1:20, 1:10 or 1:5. In some cases candidates had just made up a scale to suit the page. This is not appropriate. Teachers are reminded that there are clear drawing conventions to be used when producing 2D working drawings. To gain merit or excellence these need to be applied appropriately and accurately.</p> <p>Design drawings must be candidate-generated responses to design briefs. There should be no common class exercises or bodies of work that is not the individual candidate's generated ideas or solution.</p>
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### 3. Assessment Report for 91339: Produce instrumental perspective projection drawings to communicate design ideas

<b>Achieved</b>	<p>Candidates who were assessed as Achieved commonly:</p> <ul style="list-style-type: none"> <li>• produced an instrumental perspective drawing that applied the principles of perspective projection correctly, showing the correct setting out of the picture plane, eye line, ground line, vanishing points and station point</li> <li>• produced a perspective drawing that showed complexity in terms of detail and / or form.</li> </ul>
<b>Not Achieved</b>	<p>Candidates who were assessed as Not Achieved commonly:</p> <ul style="list-style-type: none"> <li>• produced an instrumental perspective drawing where the principles were not applied correctly; the most common fault was not projecting the vanishing points correctly from the station point and picture plane set up</li> <li>• produced an instrumental perspective drawing that was simple in shape and form, and lacked the communication of complex information in terms of showing any real detail.</li> </ul>
<b>Achieved with Merit</b>	<p>Candidates who were assessed as Achieved with Merit commonly:</p> <ul style="list-style-type: none"> <li>• produced an instrumental perspective drawing that applied the principles of perspective projection correctly, showing the correct setting out of the picture plane, eye line, ground line, vanishing points and correctly used the height line to project heights on the drawing</li> <li>• showed some skill in being able to project clearly the detail of the design features such as window frames, door frames and railings showing thickness and depth communicating construction or materials</li> <li>• produced an instrumental perspective drawing that was skilfully drawn in terms of clear and effective line work</li> <li>• plotted points for more complex shapes and or curves.</li> </ul>
<b>Achieved with Excellence</b>	<p>Candidates who were assessed as Achieved with Excellence commonly:</p> <ul style="list-style-type: none"> <li>• selected a view point that enabled the perspective drawing to communicate visual information about the design effectively and the perspective drawing was highly informative and visually realistic</li> <li>• produced a perspective drawing that was accurately projected. Design features were skilfully and accurately plotted such as weatherboards, gaps in fittings, handles, guttering, flooring and decking. A high level of drawing was used to communicate this design information.</li> </ul>

<p><b>Standard specific comments</b></p>	<p>Candidates that attempted this standard generally had an understanding of how to produce an instrumental perspective drawing and achieved success. They understood the principles of perspective and how to apply them. Those that were able to project detail of the design features accurately were able to access higher achievement levels. The majority of candidates produced architectural perspective drawings.</p> <p>Common issues that prevented candidates achieving at the higher levels were: not using the height line correctly, the height line was often projected correctly but the heights were not then projected around the object correctly to plot the required points. This prevented them from moving past achieved.</p> <p>In some cases the perspective drawing was too small to enable the candidate to show design features with any detail and therefore restricted them to a lower final grade.</p> <p>To achieve with excellence candidates needed to select a viewpoint that effectively communicated their design. It was pleasing to see a number of candidates had spent time selecting a view point and thinking carefully about the relationship between the Station point, Picture Pane, Eye line and Vanishing Points before starting. This enabled them to obtain a drawing that did not distort their design and allowed the drawing to be drawn to a size so as to enable the design features to be shown clearly and in detail therefore enhancing their drawing.</p> <p>A good number of candidates presented CAD perspectives. They often presented two or three drawings, one showing the construction lines overlaying the perspective turned on, the other showing the actual perspective without the construction lines so as to show the features more clearly. The concern was that these drawings were often quite small, line work was quite thick and the detail was lost, preventing candidates achieving at the higher levels.</p> <p>Candidates should remember to attach the plan and elevation to the perspective to justify projection points. A number of candidates had removed these and the markers could not verify heights.</p> <p>Teachers should encourage accuracy and quality drawing skills.</p> <p>There is a need to show construction clearly, especially circles. These were often just drawn in. To have success at the higher levels these points need to be plotted accurately.</p>
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