

National Certificate of Educational Achievement

2012 Assessment Report

Design and Visual Communication (DVC) Level 1

- 91063 Produce freehand sketches that communicate design ideas**
- 91064 Produce instrumental, multi-view orthographic drawings that communicate technical features of design ideas**
- 91065 Produce instrumental paraline drawings to communicate design ideas**

STANDARD REPORTS

91063 Produce freehand sketches that communicate design ideas.

ACHIEVEMENT

Candidates who were awarded Achievement for this standard demonstrated the required skills and knowledge. They typically:

- used a limited range of sketching techniques, i.e. only used crating or quick rendering, not both
- used a limited range of 3D drawing modes, i.e. only sketched in oblique or isometric
- showed limited in-depth design ideas related to function
- showed limited use of drawing techniques; line hierarchy, crating, use of tone and colour
- lacked proportion, particularly when drawing architectural 3D images
- showed little detail in their sketches, only on surface views.

NOT ACHIEVED

Candidates who were assessed as Not Achieved for this standard lacked some or all of the skills and knowledge required for the award of Achievement. They typically:

- did not include 2D views, i.e. only 3D views
- did not include 3D views, i.e. only 2D views
- did not use any of the sketching techniques, i.e. no crating, line hierarchy or quick rendering
- only produced one 2D and 3D view each that failed to communicate their design ideas
- used a poor brief that limited potential outcomes
- used templates to produce sketches i.e. tracings off instrumental drawings or used rulers
- included photocopies rather than original sketches.

ACHIEVEMENT WITH MERIT

In addition to the skills and knowledge required for the award of Achievement, candidates who were awarded Achievement with Merit typically:

- produced sketches that explored visual appeal in greater depth, i.e. deliberate development of form and surface features
- produced sketches that explored functional elements of their design ideas by moving beyond the surface, i.e. sectional and exploded sketches
- indicated proportion by including measurements or a human scale in their sketches
- produced design ideas based on more complex forms
- produced well-proportioned sketches
- were able to show detail of their ideas using techniques such as; arrows, sectioning, exploded views, assembly drawings in a simple manner
- were able to show the shape and form of their design ideas clearly, often with appropriate rendering to enhance the communication of the idea
- communicated clearly and supported design ideas using different methods such as mock-ups, photos of final product and annotation.

ACHIEVEMENT WITH EXCELLENCE

In addition to the skills and knowledge required for the award of Achievement with Merit, candidates who were awarded Achievement with Excellence typically:

- produced a comprehensive range of sketches that explored and developed design ideas in a deliberate and effective way
- demonstrated an excellent level of accuracy with regard to the line quality of the sketching techniques used
- showed a detailed understanding of the function and construction of their design ideas through their accurate use of exploded views, sectional and informative sequential sketches
- were able to demonstrate a thorough understanding of the functional and aesthetic features
- presented design sketches that were appropriate, accurate and complex
- were able to convey the intent of the design idea by placing it in the intended environment or by holding in a hand which demonstrated ergonomics.

OTHER COMMENTS

The Textile Technology submissions were very difficult to mark in 2012. Successful students gained a good understanding of what this standard required of them to gain the higher grades.

A higher proportion of Textile Technology submissions were awarded Merit than in 2011, as they met the criteria for proportion, shape and form, however, some were limited to a lower grade because their submission lacked detail.

The award of Excellence was limited as detailed sketches mostly showed surface views only.

Contexts with a decent function worked the best. Generally briefs such as craft knives, torches, lighting and seats were successful whereas briefs such as packaging, drink bottles and coffee cups were less successful.

Product design briefs produced more in-depth sketches that focused on functional aspects while architectural briefs produced sketches that explored aesthetics and proportion in greater detail.

The use of very poor design briefs limited the evidence that students could provide. Some design tasks did not suit and as a result students produced inappropriate evidence.

While the use of Visual Diaries is an intrinsic part of teaching and learning in DVC, often the best evidence for assessment was not identified and selected. Awarding of Achievement is determined by the student recognising what was their best work and hence affirming their understanding of the standard. Taping off sections from the diary not to be considered for assessment would assist the assessor.

91064 Produce instrumental, multi-view orthographic drawings that communicate technical features of design ideas.

ACHIEVEMENT

Candidates who were awarded Achievement for this standard demonstrated the required skills and knowledge. They typically:

- produced a single drawing that showed basic design features which was often drawn to scale
- used third-angle orthographic projection and showed evidence of projection between the views
- had knowledge of and used suitable conventions
- distinguished between line types poorly, i.e. construction lines, outlines, section lines
- had included a sectional view but had drawn it incorrectly
- used CAD to produce drawing often with incorrect dimensioning
- had design drawings to support their orthographic drawing
- applied rudimentary conventions
- drew simplistic objects.

NOT ACHIEVED

Candidates who were assessed as Not Achieved for this standard lacked some or all of the skills and knowledge required for the award of Achievement. They typically:

- did not include key conventions such as title blocks, labels, key line types or dimensions
- did not show at least two views or no suggestion of views projecting from each other
- did not communicate their design due to messy line work
- used freehand lines for all or part of their drawings, with ruled reference lines and circles
- did not use a scale
- drew very poor CAD drawings that did not use appropriate conventions
- produced plan views on single pages with supporting elevations on other pages – no evidence of projection indicated
- did not communicate their own design ideas. Instead they were a class exercise or a drawing of an existing design and not student-generated work
- produced views not in third angle
- produced only one view, i.e. a plan or sectional view.

ACHIEVEMENT WITH MERIT

In addition to the skills and knowledge required for the award of Achievement, candidates who were awarded Achievement with Merit typically:

- were able to use a scale and verify it by dimensioning the drawings
- had knowledge of appropriate conventions and used these correctly to communicate information in the drawing
- drew complex design ideas or were able to use sectioning and hidden detail to communicate visual information
- completed drawings using key line types

- produced drawings that demonstrated greater understanding of orthographic projection
- used projection effectively to construct each of their views
- produced drawings based on more complex forms that used appropriate construction techniques
- produced drawings that showed internal features in the way of sectional views
- lacked accuracy of measurement and precision of line-work which would otherwise progress the submission to Excellence.

ACHIEVEMENT WITH EXCELLENCE

In addition to the skills and knowledge required for the award of Achievement with Merit, candidates who were awarded Achievement with Excellence typically:

- had sound knowledge of drawing conventions and used these effectively
- had effective line-work, neat and precise, enabling clear communication of the drawing
- communicated design features accurately using key line types
- constructed very accurate drawings using correct construction techniques
- produced more than one drawing to show detail and purpose
- demonstrated understanding of conventions and attention to detail
- selected their sectional views with intent and were able to communicate in-depth information about the structure and use of their design ideas
- demonstrated effective use of CAD programmes to produce accurate line weight in their drawings and correct dimensioning.

OTHER COMMENTS

Students who produced only one drawing were often limited in the grade they could receive. A minimum of two views within a drawing needed to be shown, complete with appropriate conventions and evidence of projection.

Some students produced basic orthographic drawings because their design ideas were basic and lacked technical detail and although they produced sectional drawings, these did not manage to communicate any more detail.

Scale was an issue for many students, as was the distinction between line types. Students that did well were deliberate in their sectioning, constructed complex shapes effectively and used all conventions accurately.

Projects based on the modification of a standard design, for example, a toy digger or a toy with movable components, made it difficult to differentiate between what was the students own design ideas and what were standard components.

The results for CAD drawings were varied. Some schools constructed their views on programmes like Illustrator and were very effective in their use of line types and projection. Other schools seemed to 'grab' views from their 3D modeling software and position within a third angle orthographic layout, adding in some construction lines and conventions. For some, views were over-complicated by trying to show too much information about internal features with too many hidden detail lines that were confusing.

Many CAD drawings were very well done as long as students understood how to change line types and sizes for titles and labels.

Students who only entered this standard should submit work to show that the design is their own idea and not from a class exercise. This is very important especially if the features of their design are basic.

91065 Produce instrumental paraline drawings to communicate design ideas.

ACHIEVEMENT

Candidates who were awarded Achievement for this standard demonstrated the required skills and knowledge. They typically:

- were able to use instruments to produce a recognised paraline drawing method. These were often isometric, oblique and planometric
- were able to construct the drawings using correct line types e.g. construction lines and outlines and with the aid of templates. Compasses were used infrequently in the construction of circles and curves
- produced drawings communicating the exterior of the design idea
- produce drawings to a suitable scale and measurement
- submitted a paraline drawing of their own design that was simple but correctly drawn
- showed insufficient detail on the drawing of what the final design should look like, to move to a higher grade.

NOT ACHIEVED

Candidates who were assessed as Not Achieved for this standard lacked some or all of the skills and knowledge required for the award of Achievement. They typically:

- were unable to produce a complete drawing
- did not use instruments or templates to produce the paraline drawing
- were unable to use construction lines and outlines to communicate the drawing
- confused perspective drawings with paraline drawings, including non-paraline CAD drawings
- left line-work as construction lines only
- had no design ideas to support the drawing, submitting generic class exercises
- used freehand lines in their drawing (usually for circular aspects of the design)
- sent in photocopies rather than the original drawing
- did not use construction lines or they were unable to be seen due to rendering over submitted material.

ACHIEVEMENT WITH MERIT

In addition to the skills and knowledge required for the award of Achievement, candidates who were awarded Achievement with Merit typically:

- produced complex drawings that often included circles, plotted curves using ordinates and detailed design features
- produced drawings that were able to communicate internal design features through the use of exploded, sectional and cut away views. Surface features were also very accurate
- used construction lines and outlines to clearly communicate the design features
- produced one accurately constructed complex form showing detail

- produced more than one drawing of the same 3D form to communicate extra detail
- produced drawings that focused on more complex surface features and functional details
- included detail of design assembly, construction or operation through extensive smaller scale drawings.

ACHIEVEMENT WITH EXCELLENCE

In addition to the skills and knowledge required for the award of Achievement with Merit, candidates who were awarded Achievement with Excellence typically:

- produced related drawings (often two drawings) to communicate their design ideas
- communicated the design ideas using cut away and exploded views, which showed detail
- used the most appropriate view point for the drawing
- demonstrated design intent correctly and appropriately through exploded views, sequential views or cut away views. These views showed the function and aesthetic qualities of the design
- produced drawings that had a scale, so accuracy in measurement could be clarified
- used construction lines that were the correct weight and did not interfere with the communication of the design intent. Precise line intensity and clarity was also used
- used outlines that were of the correct weight and were consistently applied to the correct areas of the drawing
- demonstrated a higher level of thinking, with workable clear construction details of their design, or working components, to correct proportions.

OTHER COMMENTS

There were a lot of good submissions where students were awarded Merit; however, they needed other drawings to communicate ideas in a lot more depth to be awarded Excellence.

Students needed to draw detailed drawings that clearly related to the main paraline drawing.

Students who showed reasonable understanding of what was required; use of instruments, understanding of instrumental drawing techniques and conventions to communicate their design ideas were often more successful.

More than one drawing was generally better than just one.

Students that did really well produced an accurately drawn, well-considered set of drawings that communicated the functional and aesthetic features in detail effectively, they clearly thought about the views they wanted to show and paid attention to detail.

Results for CAD drawings were varied. The most successful drawings communicated the form and internal features in a well-considered set of complete, sectional, detail and exploded views. Where a student had simply chosen to show their 3D form from multiple different angles, they were unable to communicate in-depth information about the structure and use of the design.

Product design contexts were most successful in communicating in-depth functional and aesthetic information. Spatial design contexts mostly focused only on aesthetics.

Students should submit un-rendered material for this standard, as it is difficult to find evidence of construction lines in rendered material. Some schools are still sending in justifications for the methods chosen, this is unnecessary, as is perspective submissions.

In the attempt to gain higher grades, students attempted to show exploded views of their designs, however, these lacked any form of connected detail. Some students removed construction lines and the evidence of how they created circles or complicated shapes.