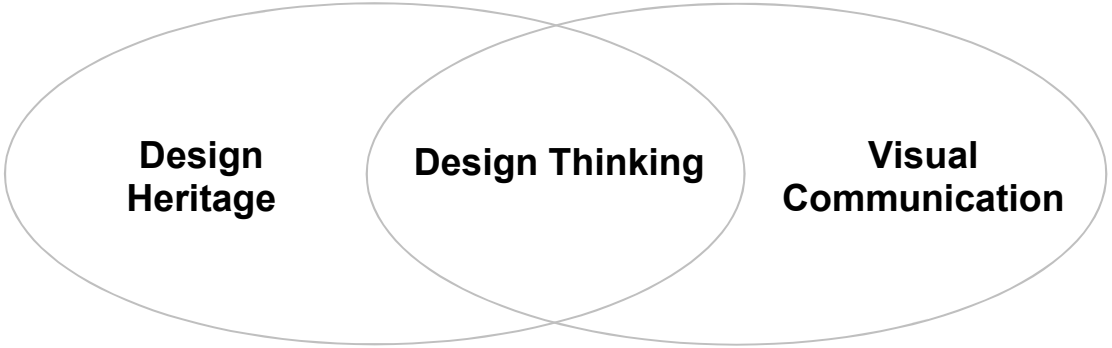
Design and **Visual Communication** (**DVC**)

A Teaching and Learning Guide 2018
Version 1



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Foreword

This Guide was written by Motu Samaeli and Ron van Musscher to reflect current Design and Visual Communication practice and its uniqueness in New Zealand Secondary schools. It should feel familiar to most DVC teachers, although there is some curriculum material that will challenge existing practice, this is deliberate and anticipates the continuing evolution of the subject.
It describes curriculum knowledge, it is not focussed on the NCEA assessment standards however the curriculum knowledge in this guide should achieve successively in the NCEA standards.
The Guide is not perfect and it is intended to evolve and be regularly updated (annually) and expanded through contributions from teaching programmes and exemplified by student work, this will depend on participation from our community. Please use the NZGTTA forum to discuss its content and/or forward suggestions and contributions to us.
The Guide is also intended to offer support to new teachers to DVC, either as trainees or those from oversees.

The Guide will be hosted on the NZGTTA website (and possibly TKI) in a PDF format, please distribute throughout our community.

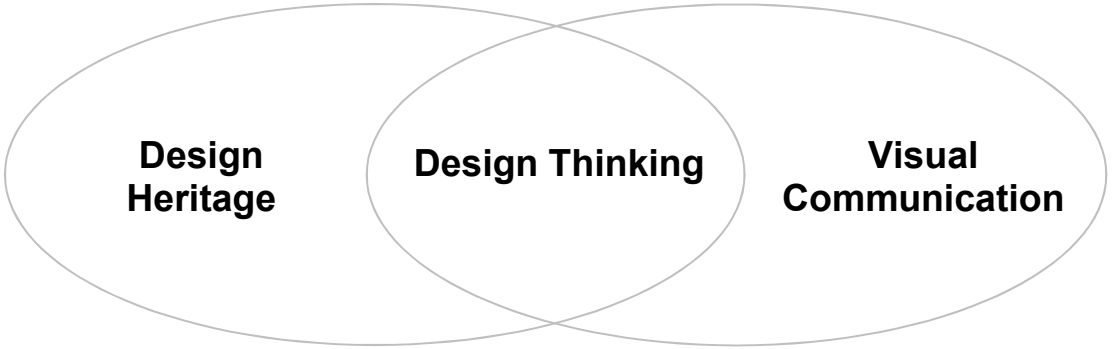
This Guide was initially written by Motu and Ron together over many hours in our spare time debating the overarching structure and objectives and subsequently through the awarding of two terms of study leave by the Ministry of Education in 2017, when it was completed by Ron (I am grateful for that award and offer my thanks to MOE for it).

Thanks go to:
Peter Renwick and Philip Mottram for giving up lunch-times to provide a sounding-board and critique for the objectives and material in the Guide.
NZGTTA for supporting the project.
NZGTTA branches Auckland, Hawkes Bay, Wellington and Christchurch for providing a presentation forum.
Donna Elliott for proof-reading.

What distinguishes Design and Visual Communication (DVC)?

Design and **Visual Communication** (**DVC**) is an area of learning within the New Zealand Curriculum, where students learn about **design**, develop their practice of **designing**, and develop their **design thinking** in the context of **spatial** and **product** design. Design, designing and design thinking is explored and expressed through **visual communication** and is informed by **design heritage**.

Learning in Design and Visual Communication focuses on the inter-related fields of:



Design is the imagining and creative thinking of novel, new and beneficial ideas, resolving problems to improve the lives of people.

Designing is the activity and practice of **Design**.

Design thinking is the creative and cognitive activities of perception (sensation, observation and awareness), inspiration, imagining, interpretation, generation and synthesis, leading to invention and improvement that informs designing.

Design thinking is expressed through **visual literacy**; the ability to make meaning from images, and to make images that communicate meaning.

Visual Communication: is the presenting of the action of design thinking, design narratives and outcomes, using representation and presentation skills and techniques.

Design Heritage: is the history, culture and awareness of design: the approaches to and perspectives of design practices, design fields (architecture, interior, product, landscape, fashion, media design, etc.), design eras/movements, designers, design artefacts and the elements of design.

Spatial and **product design** contexts include: Architecture, Landscape design, Interior design, Town planning, Naval architecture, Industrial design, Automotive design, Fashion design, Graphic design, Furniture design, Engineering.

Design and Visual Communication Learning Objectives and Indicators: L5

	Design Heritage (DH)	**Design Thinking (DT)**	**Visual Communication (VC)**
L5 junior	Investigate knowledge of **designing and design principles** • *Designing* is the consideration of divergent and convergent possibilities in ways that are purposeful to a spatial or product design context. This is supported by design decisions. • *Design principles* are aesthetics (qualities of appearance, visual appeal, good taste, and beauty) and function (the effectiveness of how things operate).	Develop design thinking through **generating, exploring and communicating design ideas** • *Generating ideas* involves the imagining of different initial ideas as starting points for potential design. • *Exploring ideas* involves generating and considering possible alternatives for the purposes of refining design ideas. • *Communicating design ideas* uses visual modes (e.g. sketching, drawing, model making, digital modelling etc) to describe design ideas and decisions.	Develop skills in **drawing and layout** • *Drawing* is the communication of design thinking through media, materials, equipment, and drawing systems. • *Layout* involves the composition of visual information to describe ideas.

Design and Visual Communication Learning Objectives and Indicators: L6

L6 Yr 11	Demonstrate knowledge of **the work of designers** and **design precedent** • *Work of designers* includes the aesthetic and functional characteristics of their design artefacts. • *Design precedent* includes historical and contemporary design artefacts.	Demonstrate knowledge and skills in **visual literacy** and **designing** for generating, exploring and explaining design thinking • *Visual literacy* is the ability to make meaning from images, and to make images that communicate meaning. • *Designing* is the activity and practice of design, imagining and creative thinking of novel, new and beneficial ideas, and the resolving of problems to improve the lives of people.	Demonstrate skills in **applying representation and presentation techniques** • *Representation techniques* is the use of drawing systems to communicate the meaning of design ideas through shape (2D) and form (3D). • *Presentation techniques* are the organisation of visual information to communicate the meaning of design ideas.

Design and Visual Communication Learning Objectives and Indicators: L7

L7 Yr 12	Demonstrate knowledge of **specialist design fields** and **design philosophies** • *Specialist design fields* includes design approaches, technical understanding and visual communication techniques relevant to spatial and/or product design. • *Design philosophies* includes design movements/eras, their manifestos, and the influencing social factors (cultural, historical, societal, technological).	Demonstrate design thinking through **generating and evolving** design ideas, and the application of **specialist** visual literacy in response to a **brief** • *Generating ideas and evolving ideas* is a progression in the development of the design idea(s) where the cumulative effect of the interrogation and refining of ideas provides further possibilities. • *Applying specialist visual literacy* is the ability to make meaning of the visual communication techniques in the fields of spatial and product design and to use these techniques to communicate their own thinking. It requires awareness of the specialist design thinking and practices used in spatial and product design. • *In response to a brief* is the framing of the design context in terms of the situation, specifications and broader considerations and implications.	Demonstrate a narrative by applying **specialist representation and presentation** techniques • *Demonstrate a narrative* is about describing design thinking progressively. At this level, the emphasis moves to how students use their visual communication skills and techniques to show the progression of their thinking and their solutions. • *Specialist representation* is the use of drawing systems to communicate design thinking appropriate to a Spatial or Product design context. • *Specialist presentation techniques* is the organisation of visual information in terms of compositional principles and the use of modes and media in a Spatial or Product design context.

Design and Visual Communication Learning Objectives and Indicators: L8

L8 Yr 13	Demonstrate knowledge of **design perspectives** • *Design perspectives* includes the personal values, tastes and views that inform a discussion about design**.**	Demonstrate design thinking through the **integration** of specialist visual literacy**, ideation, initiating and resolving** design ideas in response to a brief • *Integration* occurs when students are aware that their personal perspective and design thinking is informed by design heritage and utilises visual literacy developed through visual communication. And reciprocally they are also aware that their design thinking influences how they view Design Heritage, and how they utilise their visual literacy and Visual Communication skills. • *Ideation* involves the interpretation of experiences, through visual communication strategies, as the underlying driver of initial ideas that are interrogated and re-generated towards potential design ideas. • *Initiating and resolving design ideas* involves the evolution of ideas to a deliberate and considered conclusion.	**Communicate** a narrative by **integrating** specialist representation and presentation techniques • *Communicate* means there is an audience that the narrative is addressed towards. • *Integrating* is the coherent amalgamation of drawing systems, graphic materials and equipment, and visual promotion for the purposes of articulating a visual narrative of design thinking and ideas to a forum.

DVC Learning Objectives L5 - Design Heritage

Investigate knowledge of **designing** and **design principles**

Students need to understand that:

- ***Designing*** is the consideration of divergent and convergent possibilities in ways that are purposeful to a spatial or product design context. This is supported by design decisions

Designing is the imagining and thinking about possibilities in relation to a problem or a situation. Designers use design thinking to produce novel solutions to situations and problems. They apply imagination and creativity to these situations and problems, they propose possibilities, explore different combinations, look for simplicity, and are analytical. They use visual communication techniques and a visual literacy, and apply creative and analytical strategies to problem solving.

The purpose of designing is to produce product and architectural solutions for people.
Designing can be reduced to two phases:

divergent thinking and **convergent** thinking.

Students think about differing and varying possibilities, they consider and select their best ideas, and explore and refine them, ultimately to a solution. While these phases can be discrete they often occur in parallel. Designing is communicated visually, by sketching, drawing and modelling, by hand and digitally, and supported by reasoning (oral and/or written).

DVC Learning Objectives L5 - Design Heritage (cont.)

To enable and organise designing, a “design process” is often used. There are many different design processes that are evolved to suit industrial, commercial and teaching and learning situations. In teaching and learning the design processes used depends on the teaching and programme and the learning needs of the students.

Commonly used stages of a design process includes:

Situation; the problem/need/opportunity/context.

Brief; what the student designer is required to do and the specifications that constrain them.

Research; investigation and analysis of the problem, existing solutions, current practice and constraints. Inspiration and contexts, human factors

Ideation; generating of potential starting points by inspiration, reinterpretation, invention, and lateral thinking.

Initial ideas; ideation starting points thought of as potential ideas that might solve the problem. Creative strategies

Design development; exploration and refinement of ideas. Creative strategies

Idea summary, critique and decision making: communication of the status of design thinking and decisions made. This can happen at multiple key milestone points as well as at the conclusion of the process.

Presentation; solution is visually explained, including rendering, working drawings, 3D drawings, digital model, models, photography.

Ongoing and final evaluation: student opinion against design considerations, expressed visually, orally (in discussion) and recorded in writing if required.

At junior level, it is expected that Teaching and Learning programmes will focus on any of these stages.

DVC Learning Objectives L5 - Design Heritage (cont.)

Students need to understand that:

- ***Design principles*** are aesthetics (qualities of appearance, visual appeal, good taste, and beauty) and function (the effectiveness of how things operate)

Aesthetics are culturally developed qualities of appearance, it should be recognised that individual opinion will vary. Aesthetics includes; balance, contrast, harmony, movement, pattern and rhythm, proportion and style for example there are many more terms.
Function is a group of terms that describes how products, systems and tools work; it includes; operation, user friendliness, efficiency, stability, fitness for purpose, ergonomic fit, durability, safety, reliability and strength, and the properties of materials.

The following is a starting vocabulary that should expand as the students experience increases.

Aesthetic term	**Definition**
Balance	There are three main kinds of visual balance: • Radial, where the design elements radiate out from a centre, such as the petals of a flower or the face of a clock; • Formal (or symmetrical), where the design on one side of a centre line is identical to that on the other side; • Informal (or asymmetrical), where the elements of a design are distributed unequally, as in the side of a teapot.
Contrast	Contrast is the opposite quality of harmony, it involves opposing elements, such as clashing colours and shapes, in the same form or design.
Harmony	Harmony in design and nature occurs when different elements are in unity with each other.
Movement	An object with strong “visual movement” tends to be shaped in a way that draws the eye in a certain direction.
Pattern and Rhythm	A pattern is a repeated design element. Rhythm is related to pattern in that it uses repeating elements but they may have a stronger quality of movement and be in the form of sequences or a series.
Proportion	Proportion has to do with the relationship between different parts of an object or composition (or between those parts and the object as a whole). The proportions of an object made to be used, such as a teapot or a jug, may have a functional as well as an aesthetic purpose. See also the Golden Ratio, and the Fibonacci series.

DVC Learning Objectives L5 - Design Heritage (cont.)

Style	Style most often relates to aesthetics rather than function. It is ever changing. What may be considered ugly or gauche one year may be the height of fashion the next. Whereas it's possible to make objective judgments on the success of a functional design, judgments on style are much more subjective and are reliant on personal taste and opinion. Style is culturally evolved and frequently reflects society's values, although many different styles may exist within a society.
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Function term	**Definition**
Operation	How things work, how a product, tool, environment or system is intended to be manipulated by the user. Describes the action of moving parts. Describes the result of input into a machine.
User friendliness	How well the product, tool or system, environment can be used and operated.
Efficiency	The ratio of useful work compared to applied energy. It is primarily thought of as the lack of wasted effort, but is also considered as a cost/benefit ratio in manufacturing.
Stability	How the product, tool, environment or system maintains it's working and operating mode without failing or collapsing.
Fitness for purpose	How well the product, tool, environment or system meets the requirements that it was designed for.
Ergonomic fit	How well the product, tool, environment or system is sized to fit the user and operator.
Durability	The ability to last and withstand wear.
Safety	Protecting the user/operator from harm. This presumes that the user/operator does not misuse the product, tool, environment or system.
Reliability	The likelihood of continued performance. This depends on user expectation, it's use and the construction of the product, tool, environment or system.

DVC Learning Objectives L5 - Design Heritage (cont.)

Strength	The ability to withstand forces and pressures. This varies depending on the materials used and the forces and pressures applied.
Materials	What designs are made from. Depends on use and expectation and suitability.

From: Design and Graphics in Technology. A resource for Teachers. MOE, Learning Media. Available on the NZGTTA website

DVC Learning Objectives L6 – Design Heritage

Demonstrate knowledge of **the work of designers** and **design precedent**

Students need to understand that:

- *Work of designers* includes the aesthetic and functional characteristics of their design artefacts

The work of designers requires students to develop their awareness of designers and their work. A list of designers needs to be established (with the assistance of teachers in short-listing appropriate designers); this should expand as the student's design awareness grows. Any designer/architect is acceptable, although, access to published resource material (web, books, local buildings or products) needs to be considered.
The following is a possible list, it is not an exclusive and Teachers are expected to expand it as they become aware of potential candidates!

Possible designers and architects (Alphabetical by surname)

Alvar Alto: Architect, Designer. (International).
Tadao Ando: Architect. (Minimalism).
Marcel Breuer: Furniture, Architect. (Bauhaus).
Santiago Calatrava: Architect, Engineer. (Post-Modernist).
David Carson: Graphic Designer. (Grunge).
Coco Chanel: Fashion. (Art Deco)
Charles and Ray Eames: Designers, Architects. (Modernism).
Norman Foster: Architect. (High Tech).
Antonio Gaudi: Architect. (Catalan Modernism).
Frank Gehry: Architect, Artist. (Post-modernist, Deconstructivist).
Eilene Gray: Furniture, Architect. (Art Deco).
Walter Gropius: Architect, Designer. (Bauhaus/Modernism).
Zaha Hadid: Architect. (Deconstructivist).
Tinker Hatfield: Shoe designer. (High Tech).
Bjarke Ingels: Architect. (Post-Modernist, Deconstructivist).
Jonathon Ives: Designer. (Modernist).
Arne Jacobsen: Furniture, Architect. (Functionalist).
Louis Kahn: Architect. (Post-modernist).
Rem Koolhass: Architect. (Deconstructivist).
Daniele Libeskind: Architect. (Post-Modernist).
Alexander McQueen: Fashion. (Modern Surrealist).
Richard Meier: Architect. (Modernist).
Oscar Niemeyer: Architect. (Modernist).
IM Pei: Architect: (Modernist).
Renzo Piano: Architect. (Post-Modernist).
Gerrit Rietveldt: Furniture Designer, Architect. (Bauhaus and De Stijl).
Richard Rogers: Architect. (Post-Modernist).
Eero Saarinen: Designer, Architect. (Neo-futurist).
Stefan Sagmeister: Graphic Designer. (Vernacular).
Ettore Sottas : Furniture, Architect. (Memphis).
Iris Van Herpen: Fashion. (Surrealist, Globalist).
Ludwig Mies Van Der Rohe: Architect. (Bauhaus, Modernism).
Viktor and Rolf: Fashion. (Modern Surrealist, Globalist).
Vivienne Westwood: Fashion. (Mod, Punk, Deconstructivist).
Frank Lloyd Wright: Architect, Furniture. (Prairie School, Organic).
Yohiji Yamamoto: Fashion. (Deconstructivist and Globalist).

DVC Learning Objectives L6 – Design Heritage (cont.)

Students should be encouraged to study a range of designers before selecting one to study in greater detail. They should read about and examine images (or actual examples if available) of a designer's work and discuss a selected work using design vocabulary of aesthetics and function. The purpose of this is to familiarise the student with designers work and to practice using design vocabulary and language. This analysis should also provide learning opportunities relevant to the student own design learning.
It is also helpful that the student learns about the designer's life, what they did, when and where they lived, what socio/economic/technological events were occurring and what design movement or era they are part of, anticipating possible teaching and learning in L7 (Yr 12).
It is up to each teacher and their programme to establish how to encourage student response to this study. Students could be asked to present their research in essays, Power-Points, displays, presentations to other students and in discussion. Students could also reflect on their study in their own work, using the studied designer as an inspiration.

Vocabulary
When discussing the work of designers, the students should use (where relevant) aesthetic and functional terms as introduced in the L5 DVC Learning Objectives, and further words and terms as students come across them. Using these terms needs to be learnt and practiced; examples should be modelled and practiced by students.

DVC Learning Objectives L6 – Design Heritage (cont.)

Leading questions: It can be difficult for students to begin an analysis of designer's work without guidance; the following questions are suggested to begin discussions about designs using design vocabulary and language; they can be edited or expanded to meet the needs of the students. It is intended that the student's responses are diagrammatic, oral or written. These questions can be used as a literacy strategy to meet other school-wide goals.

Answer each question below if it is appropriate for your design. Then put your answers together as a paragraph.

1 What is this? It is a …
2 Who designed it? It is designed by …
3 What does it do and who is it for? Describe how it is used, works and operates.
4 What materials is it made of? Is it mass-produced, or one-off?
5 Describe what it looks like; the shape and solids that make it up. Is it round, cylindrical, rectangular, spherical, square, triangular, narrow, wide, tall, short, truncated (cut off), flat?
6 Are the shapes/solids symmetrical, balanced, asymmetrical, Are the parts of the design in proportion to each other? Are some parts larger or smaller? Does the proportion of the design relate to the golden ratio (1:1.618), or the Fibonacci series?
7 Is there harmony in the design? Do the parts of the design look like they should go together?
8 Are there any parts or shapes (elements) of the design that are repeated? Does this create a movement? Does it generate a pattern, a rhythm?
9 Do the shapes in the design contrast against each other? Why?
10 Describe the colour, is it a primary, a secondary colour, is it dark or light?
11 Describe the texture: is it rough, smooth, perforated (has holes in it), does it have ridges, grooves. Does it feel soft, spongy, cold, warm or sharp?
12 How is it handled or touched by people? Is there a handle, are there buttons, switches, is it intended to be worn; if so how does it fit, what keeps it attached, does the user hold it a certain way?
13 Are people meant to look at it? Is there a screen, dial, numbers, does it turn off and on, how do you tell?
14 How useful is it, how does it help people?
15 How do people move through the environment? (Way-finding, circulation).
16 How does the design relate to its immediate physical context? (Surrounding built environment, natural features, climate, and topography).
17 How has the design dealt with the interface between the interior and exterior?
18 How does the design deal with the spatial experiences: functionally/emotionally? (The configuration of volumes, the sequence of spaces?).
19 How can you evaluate the spatial experience beyond the predictable?

DVC Learning Objectives L6 – Design Heritage (cont.)

Qualitative judgments, questions of taste

When responding to designer's work, students may have a positive or negative emotional reaction and their vocabulary is not adequate to explain why. Their reaction may be evoked by previous experiences, or biased by cultural and religious issues. These qualitative judgments are the beginnings of the student developing their own taste and design perspective. The following are leading questions that help student's question their own biases and strengthen their empathy and understanding of designer's work, and with other people's responses.
These questions should be expanded by teachers to encourage their student's responses.

What is my reaction?

Try and explain your reaction to a design. Use the following questions to help your responses.

1 On a scale of 1 (negative) to 10 (positive) where would the design rank?
2 Does the design remind you of something else?
3 Are there parts of the design that are better or worse than others?
4 Is it unique, different from anything else? Or is it similar to other design's?
5 Talk with other people to find out what they think. Describe their reasons for their choice.

DVC Learning Objectives L6 – Design Heritage (cont.)

Students need to understand that:

- *Design precedent* includes historical and contemporary design artefacts

Design precedent literally means; “what has gone before” and “something setting the standard”. By studying the historical evolution of design and architecture students should notice that it is influenced by art movements and the emergence of technologies and socio-economic conditions. For example, designers from the Bauhaus exploited the emergent availability of tubular steel and the associated manufacturing technologies to design furniture. Part of the Bauhaus philosophy was to provide good modern design for everyone.

Post-modern designers such as Karim Rashid believes that aesthetics should drive modern design. Some of his designs are complex organic forms that are made using the relatively cheap rotational moulding of plastics (although there can be a high initial tooling cost).

Design precedent also implies that another designer may have considered a similar design situation before. Doing research into the situation better informs the student with existing knowledge and examples. Student’s, by studying existing designs, become aware of the outcomes of other people’s design thinking, why the designer made their design decisions. This informs the student’s awareness and establishes parameters of what they might consider in their own design thinking.

DVC Learning Objectives L7 – Design Heritage

Demonstrate knowledge of **specialist design fields** and **design philosophies**

Students need to understand that:

- *Specialist design fields* includes design tools, technical knowledge and visual communication techniques relevant to spatial and/or product design

Design tools used for the development of spatial design ideas include but are not limited to: bubble diagrams, symbolism and semiotics, and paper architecture.
Technical knowledge in spatial design include but is not limited to: materials, processes, sustainability and environmental considerations (e.g., topography, climate, aspect, building materials and details, and organisation of space and light)
Learning about specialist design fields requires students to realise that spatial design and product design are not only different but are terms that include many sub-fields that also vary depending on their specialism. It is worthwhile building a matrix of specialist design fields (a possible matrix is illustrated below). This and the accompanying research of design philosophies (next bullet point) will help students identify specialist fields and be aware of their differences.
While this matrix can be initiated by the teacher, students should contribute by researching and adding sub-fields, and defining what each sub-field is/does.

Spatial Design	**Product Design**
Architecture: Vernacular vs heroic	Industrial design: design for a specific industry
Landscape design	Automotive design: design for land based transportation (cars, buses, trucks. Can include trains.
Interior design	Fashion design; a style or product in time that can be worn, held or attached to the body, includes an aesthetic that is related to materials and end user function. It can be 2D, 3D, temporary or permanent and has a visual composition.
Town planning	Furniture design
Naval architecture	Engineering

DVC Learning Objectives L7 – Design Heritage (cont.)

Ergonomics and anthropometrics

Within specialist design fields two important areas of technical knowledge that are applied are; ergonomics and anthropometrics. Ergonomics is the measurement and interface of people to products and systems. Products and systems that are designed to be used by people need to fit and be operated by the human body, this includes the need for people to understand how to operate the product or system.

Anthropometrics is the field of individual and collective measurements of the human body. This information is applied in areas like sizing of clothes, seating, seat spaces in public transport and theatres, sizes of bicycles, and alternatively to custom-make individual items such as furniture and clothing. In Fashion Design anthropometrics relates to garment/pattern grading, scale and specific body measurements although this can be a rigid formula.

This knowledge of, and application of ergonomics, and the use of anthropometrics needs to be shown in the student's design ideas.

Aesthetic and functional roles of the designer

To broaden student's awareness and understanding of designers and their work the following questions could be posed for students to research. These questions can support a visit to or from a professional designer.

What does an Architect deal with? Who does an Architect collaborate with?
What does a Product designer deal with? Who does a Product designer collaborate with?
What does a Fashion designer deal with? Who does a Fashion designer collaborate with?
What types of drawings does an Architect use to communicate their ideas?
What types of drawings does a Product designer use to communicate their ideas?
What types of drawings does a Fashion designer use to communicate their ideas?

DVC Learning Objectives L7 – Design Heritage (cont.)

Students need to understand that:

- *Design philosophies* includes design movements/eras, their manifestos, and the influencing social factors (cultural, historical, societal, technological)

At this curriculum level the student should be encouraged to study a range of design movement/eras before selecting one to study in greater detail. The student should read about a design movement/era and identify and describe its characteristics and elements of design, and how they are used in that design movement/era using analytical drawings or using design vocabulary (aesthetics and function).

Students should be aware that significant design movements are driven by influential designers and a manifesto. A manifesto is a statement of philosophy of the design movement. Students should read these and engage in discussions with others to understand the design movement better. They should consider how their own design perspectives might compare.
[see Karim Rashid, De Stijl, Bauhaus]

Students should also experiment with selected characteristics of the design movement in their own designs. This will help understanding of the design movement and allow the students to interpret these characteristics and further inform their own design thinking.

Students should study and describe the social factors that influenced the design movement or era; this could include the political and economic environment, and technological developments to inform the student's own design thinking. Students should engage in presentations, discussions, and critiques to learn from each as an efficient way to cover a range of design movements.

Teaching and learning programmes can offer a range of possible design eras/movements or restrict the choice. A range offers opportunities for comparisons and establishing historical context. A narrow choice may be determined by lack of resources.
There are many sources of possible design eras/movements: Design Museum, et al.

DVC Learning Objectives L7 – Design Heritage (cont.)

Possible design eras/movements: This list is expandable. Ask students to organise this list in a chronological sequence.

Arts and Crafts
Art Nouveau
De Stijl
Bauhass
Deconstructivism
Deutsher Werkbund
Modernism
Constructivism
Organic and Biomorphism
Baroque
Glam
Industrial Revolution
Scandinavian
Shaker
Minimalism
Post-Modernism
Neoclassicism
Digital
Futurism
International
Radical/Anti design/Punk
Japanese Minimalism

Leading questions: The following questions are suggested to begin discussions about design movement/eras. These may be edited or expanded to meet the needs of the students. It is intended that the student's responses are oral or written.

Broadly research a range of designers and their design eras and/or movements and select one to do a more in-depth study on.

Answer the following questions on your selected design era or movement: support your research with images and quotes

1. Identify and describe the selected design era or movement.
2. Describe the selected design era or movements philosophy. What design era or movement preceded it?
3. Select a design from the selected design era or movement and analyse it with design language (aesthetics and function). Describe the elements that reflects the design era/movement.
4. Identify the contemporary and emerging technologies being used in building, manufacturing and industry during the design era/movement. Describe how the design era/movement was influenced by these technologies.
5. Who were significant people in the design era or movement? Describe their work.
6. What were the social, political and economic factors that existed at the time?
7. How has the design era or movement influenced todays designs?

DVC Learning Objectives L8 – Design Heritage

Demonstrate knowledge of **design perspectives**

Students need to understand that:

- *Design perspectives* includes the personal values, tastes, and views that inform a discussion about design

Students are developing their own opinion and perspective. These are informed by an awareness of their personal values, tastes and views, and their learning of design precedent and societal opinion.

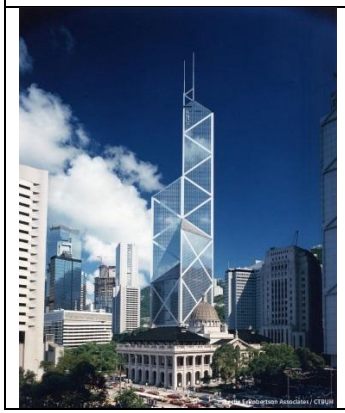
The student should be encouraged to study a range of design icons before selecting one to study in greater detail. The student should read about and examine (images, or actual examples if available) of the icons and discuss their selected work using design vocabulary, engage in criticisms and reflection on their own reaction to the icon. The purpose of this is to familiarise the student with the icon, use design vocabulary, and to develop their confidence in making personal judgments.

The student should engage in following activities and leading questions before expressing their own design perspective or manifesto:

Define what a “design icon” is.

Research and select a design icon, use the following table to record potential “design icons”.

DVC Learning Objectives L8 – Design Heritage (cont.)

Identify a design icon; possible examples.					
Encourage students to develop a list. Include images, description of the icon, date/era, Design Movement					
Image	**Description**	**Era/date of icon**	**Design Movement**	**Designer/Architect**	**What makes it an Icon?**
	CCTV Building, Beijing	2004-2012	Deconstructivism	Rem Koolhass	
	Wassily Chair	1925-1926	Bauhaus	Marcel Breuer	
	Bank of China Tower Hong Kong	1985-1990	Modernism	IM Pei	

DVC Learning Objectives L8 – Design Heritage (cont.)

Use Dieter Rams 10 principles of design to describe, discuss and analyse the icon.

1 Is innovative
2 Makes a product useful
3 Is aesthetic
4 Makes a product understandable
5 Is unobtrusive
6 Is honest
7 Is long-lasting
8 Is thorough down to the last detail
9 Is environmentally friendly
10 Involves as little design as possible

Design Icon study questions

Discuss the design movement or era it represented, prior movements to see how it emerged and advances since, and how the designer was influenced by that era/movement.
Was there inspiration beyond design movement influences?
Did the existing and emerging technology contribute to the conception of the design icon?
What was the designer's perspective; what did they like, what was important to them? Did they follow a manifesto?
Critique (compare and contrast) the design icon against the benefits it provides.
Examine and explain what makes the design icon significant? Does it symbolise the design movement? Did the design movement emerge because of it?
Compare the icon against previous designs and explain why it is different.
Almost by definition an icon is popular. Is this true in this case or does the icon appeal to an elite? Is the icon still popular?
Why do you like it (be aware that you should reference your culture, and tastes that might help you determine why you like it).
So iconic it has become generic? Does it get copied?

Construct a personal design perspective.

Propose and discuss a personal design perspective. Explain and justify how you have come to this perspective. Compare contrast your perspective to other perspectives, justifying your differences.

DVC Learning Objectives L5 - Design Thinking

Develop knowledge and skills in **generating, exploring and communicating design ideas**

Students need to understand that:

- *Generating ideas* involves the imagining of different initial ideas as starting points for potential design outcomes.

Generating design ideas means using design thinking and strategies to consider possible initial ideas and recording these using visual communication.
While students should be encouraged to generate their own original ideas, because of their relatively limited experience they can also generate derived ideas.
It can be challenging for students generate initial ideas without some activities/preamble and strategies. Ideation is a term that is used to describe this strategy and while it isn't assessed until NCEA L3, learning about it at this level is beneficial and reflects later approaches.
[eg]
Students need to be encouraged to generate different initial ideas, not just variations of one. This allows analysis and comparison of the relative merits of different ideas.
Students need multiple situations in which to practice their thinking skills.

Students need to understand that:

- *Exploring ideas* involves generating and considering possible alternatives for the purposes of refining design ideas.

Exploring design ideas encourages students to not accept design ideas on face value, instead students are encouraged to consider variations of shape, forms, sizes and to analyse the feasibility of the design idea. Refinement (and development) is the gradual improvement of the design idea based and an analysis and resolution of aesthetics and functionality of the design ideas and its details.

DVC Learning Objectives L5 – Design Thinking (cont.)

Students need to understand that:

- *Communicating ideas* uses visual communication modes (e.g. sketching, drawing, model making, digital modelling etc) to describe design ideas and decisions.

Developing visual literacy and fluency is an acquired skill, it requires awareness and the opportunity to practice.
In DVC thinking, can and should, be conveyed by using visual communication.
Students need to be aware that they are **communicating a narrative**, that is “telling a story” about their design thinking. This is the progression from initial ideas, through exploration and refinement to their solution, and it is about the consideration given and decisions being made about their design ideas.
Students need to be aware that the quality of drawing (clarity and detail), organisation and sequence (hierarchies) of drawing and modelling also effect this story telling. This visual literacy can be supported with layout (headings, organisation, flow, etc, and in written and oral form.
Students need opportunities for collaboration; while thinking is individual it is also socially constructed and developed through listening, discussions, sharing and comparing ideas.

DVC Learning Objectives L6 – Design Thinking

Demonstrate knowledge and skills in visual literacy and designing for generating, exploring and explaining design thinking

Students need to practice and develop:

- *Visual literacy* is the ability to make meaning from images, and to make images that communicate meaning.

In DVC, visual literacy is a skill that uses visual communication (sketching, drawing, modelling etc) to express thinking. This expression provides the stimulus for reflection and review for further thinking. Visual literacy also allows for the visualisation and communication of design thinking to others.
Teaching and learning programmes should offer students as much opportunity as possible to sketch, draw and make models to communicate meaning. There should be teacher directed lessons where visual literacy is developed through practice; the review and interpretation of drawings to establish what the student wishes to communicate and/or how it could be improved.
Students should also be given opportunities in making meaning of the sketches, drawings and models of other people. Interpreting and reading the work of other designers is an exercise where students can develop visual literacy while not being self-conscious about their own work.

DVC Learning Objectives L6 – Design Thinking (cont.)

Students need to practice and develop:

- *Designing* is the consideration of divergent and convergent possibilities in ways that are purposeful to a spatial or product design context, and supported by design decisions. Designing is the imagining and thinking about possibilities in relation to a problem or a situation. Designers use design thinking to produce novel solutions to situations and problems. They apply imagination and creativity to these situations and problems, they propose possibilities, explore different combinations, look for simplicity, and are analytical. They use visual communication techniques and a visual literacy, and apply creative and analytical strategies to problem solving. (As defined in L5 Design Heritage).

Designing integrates design thinking processes and strategies, utilises design processes, visual literacy and visual communication skills to generate, explore and develop design ideas.
Practicing and developing designing at this level requires students to engage with the L5 design thinking strategies, these can be selected by the teacher or the teacher in collaboration with the students, and should be used throughout the conceptual design stages.

Brief analysis	
Ideation	Design thinking
Initial ideas	Design thinking strategies
Development; variations, exploration and refinement	

At this level (L6) while it is expected that students arrive at a outcome, (they may arrive at several solutions), the emphasis is on students developing their skills in **exploring** and **refining** (developing) their design ideas using appropriate and justified decision-making.

DVC Learning Objectives L6 – Design Thinking (cont.)

Ideation or the introduction of the brief?
Some teaching and learning programmes begin with ideation (experimenting with inspirational sources to generate shapes and forms which lead to initial ideas), letting inspiration and creativity drive design thinking, so students are not predictable in their design thinking. Alternatively, programmes may begin with an analysis of the brief, so the constraints of the brief can be analysed and challenged.
This is a pedagogical decision, either approach is acceptable but both stages should occur.
Time should be spent with students analysing the brief; asking what design solution is required. This can be supported by the following leading questions; however. Teachers however, should encourage the students to challenge the brief and specifications, possibly renegotiate what is required through discussions and thinking time. Teachers should consider restricting briefs to meet student's ability and the time required to achieve desired outcomes.

Analysing the brief

1 Describe the requirements of the brief. Can you try to simplify what is being asked for, or redefine the brief?
2 What are the limits to the brief? Are there specifications that are not negotiable?
3 Research the brief looking at existing (or similar) solutions; compare these to the brief and evaluate how well they meet the brief.
4 Record any negotiated changes to the brief and the specifications.

Ideation
Students should be encouraged to ideate, take inspiration from creative strategies to generate initial design ideas. Students should be encouraged to experiment with shapes and forms rather than evaluating them as design ideas; the purpose is to formulate new shapes and forms that can lead to initial design ideas.

Initial ideas
Initial ideas are inspired by ideation and an analysis of the brief. As the initial ideas are conceptual design idea, the students need to describe and explain how they will look (aesthetics) and how they are used/work/operate (function) at a basic level of consideration (there should be no expectation that the initial ideas fully address all aspects of the brief). These descriptions and explanations should be done visually but they can be supported by design judgments and annotations using design language. It can be helpful for the students if these descriptions and explanations involve discussions and critiques with peers and teachers, to help the students think about details they may have missed or to highlight details that they regard as important. Design thinking can be collaborative and discussions and critiques can lead to further initial ideas. As in the previous level a range of different ideas should be generated. This range is important because it encourages students not to pre-select a design idea (at this stage), giving them the opportunity to make design judgments in evaluating their design idea, by analysing and comparing the relative advantages and disadvantages of their different ideas, in both aesthetic and functional criteria and in respect of the brief. This will then provide the rationale for the selection of the design ideas they wish to progress with.

DVC Learning Objectives L6 – Design Thinking (cont.)

Development: exploring and refining

In this stage, students are expected to have selected an initial idea or a combination of initial ideas – sometimes the seed of a selected idea might come from one initial idea or elements from different initial ideas, or primarily from one initial ideas but with aspects from one or more other initial ideas. The selection process should be allowed to be quite fluid and depend on appropriate and justified decision making that purposefully respond to the brief requirements and extends the student thinking. Alternatively developing multiple initial ideas before selection of the preferred design idea as the student refines it will add extra work that will be redundant. Students should be asked to explore their design ideas by exploring and modifying a range of design ideas where **each modification is a variation that explores alternatives to prior design ideas and elements.** In generating these variations, the students should again be considering the aesthetic and functional criteria and using visual communication make their design thinking clear; this involves more detailed exploratory sketches than used during the initial idea stage. Exploring design variations is still part of divergent thinking, students are still experimenting with possibilities.

At some point during development the students will decide on a preferred design idea which they then begin to refine (this will have to managed, some students do not know how to stop exploring!).

Refining involves the gradual improvement of the aesthetics and functionality of the design idea, this should involve visual communication which explains some of the following questions:

Refinement questions: select questions that are relevant to your design idea

1. How is it used? How do people use it? Show people using, wearing, operating it. Is it easy to use? Does it have good ergonomics? Is it safe to use? What shape/form is it?
2. How does it operate? Does it have moving parts? How do the parts connect and work together? Is it strong enough? Is it durable?
3. How is it constructed? What is it made of?
4. How big is it? Is it big or small enough? Are its components in proportion? Is it symmetrical and balanced? Or not?
5. What is it for?
6. What advantages does it offer? Is it effective?
7. How will it last? Is it sustainable?
8. Is it identifiable by a colour and texture?
9. How does it relate to its setting? Does it consider the surrounding physical environment? Does it deal with climate? Does it deal with views and aspect? Does it deal with the site?

DVC Learning Objectives L7 – Design Thinking

Demonstrate knowledge and skills in applying **specialist** visual literacy and designing for **generating and evolving** design ideas in response to a **brief context**

Students need to practice and develop:

- *Applying specialist visual literacy is the ability to make meaning of the visual communication techniques in the fields of spatial and product design and to use these techniques to communicate their own thinking. It requires awareness of the specialist design thinking and practices used in spatial and* product design.

This involves the student developing their own visual literacy by being aware of, and using the specialist visual communication techniques and technical knowledge to express their own thinking.

Spatial Design visual communication techniques and their uses

1.	Bubble diagrams	To identify the spaces, their proximity and inter-connection in a visual form. Usually used early in design thinking when working out parameters.
2.	Paper architecture	Simple conceptual forms that are easily made and can be viewed easily from many angles
3.	Topographic models	Layered contours making a 3D form of the architectural site.
4.	Floor plans	A section view of the floor, rooms, walls, doors and windows.
5.	Sections and elevations	Elevations of individual walls and sections through the building to show the relationship of spaces and structure.
7.	Architectural drawing systems	Usually Isometric, planometric and perspective to show exterior form, relationship to context, scale and nature/character of interior spaces. CAD (computer aided drawing); there are numerous systems available.
8.	Rendering	Colour and tone used to indicate materials, and light and shade. Can include site environment.
9.	Photo-montage overlay	Photos of existing buildings are combined with drawings
6.	Tracing	Over images of existing buildings. Helps to get proportion correct before developing own ideas. Tracing over own design allows rapid development without having to re-draw all components.

DVC Learning Objectives L7 – Design Thinking (cont.)

Spatial Design technical knowledge

1.	Spatial design fields	Architecture (heroic, vernacular), interior design, landscape architecture.
2.	Topography	The contour (hills and valleys) of the site.
3.	Construction materials and details	What the building could be constructed from. Details such as windows, doors, wall-cladding, roofing
4.	Structure	Types of structure (wood frame, steel frame, brick/block frame, pre-cast concrete, etc).
5.	Local climate	Wind patterns, seasonal changes.
6.	Aspect	Buildings position on site related to North (consider the effects of sun), relationship to other features such as view, near the water (sea, lake, river, etc), topography and other buildings.
7.	Light (natural and artificial)	Sun lines, windows, interior lighting
8.	Organisation of space	Relationship and sizes of required rooms, access and circulation.
9.	Environment	In suburban settings, open fields, forests (urban, suburban, rural).
10.	Sustainability	Minimising waste, efficient use of building materials, use of materials that don't degrade the environment.
11.	Room layout and dimensions	Minimum sizes for utilities determined by anthropometrics and standardised construction.
12.	Interior/exterior relationship	The interior determines the exterior, or the exterior determines the interior? Indoor/outdoor flow, permeability of walls (openings; both visual and physical), reconciling interior considerations with exterior considerations.
13.	Occupancy	Public/private spaces, ritual, activity, disability, health and safety.

Product Design visual communication techniques and their uses

1.	Rapid sketching: crating and outlines	Using selected drawing systems to lightly and roughly frame/crate shapes and forms, then outline. Simple conceptual forms that are easily made and can be viewed easily from many angles.
2.	Drawing systems	Isometric, oblique, planometric.
3.	Design variations and views	Multiple versions of a shape/form grouped together. Sketch from different angles to see the other side. Cut-away views to see internal detail.
4.	Rendering	Apply tone to show 3D effect and colour to communicate aesthetic and material features.
5.	Photo-montage	Adding own drawings over photos of existing products.
6.	Tracing	Over design ideas to quickly produce variations.

DVC Learning Objectives L7 – Design Thinking (cont.)

7	Product working drawings	Sets of drawings that are linked with appropriate conventions, labelling and symbols to explain specialist information.

Product Design technical knowledge

1.	Operation	Rotation, folding, leverage, cantilever, gearing, sliding, buttons, zips, clip together etc.
2.	Use of mechanisms and fastenings	Hinges, levers, joints, pivots, axles, ball joints, gears, cams and followers, pistons, linkages, motors. Rivets, screws, pins, nails, clamps, Velcro, domes, concealed zips, elastic, buttons, lace, eyelets, hook and eye, boning etc.
3.	Materials	Properties of materials suitable for the design.
4.	Manufacturing processes	Industrial use of materials to produce products. Mass production versus bespoke. Machine construction versus hand-made.
5.	Sustainability	Efficient use of manufacturing processes and materials. What happens to the product when it's operational life is over?
6.	Ergonomics and anthropometrics	Ergonomics is the interface between the product and the user, the aim being to optimise user comfort, use and operation. Anthropometrics is sizes and measurements of populations.
7.	User interface	Buttons dials, touch screens, meters, etc.

DVC Learning Objectives L7 – Design Thinking (cont.)

Students need to practice and develop:

- Generating ideas and evolving ideas is a progression in the development of the design idea(s) where the cumulative effect of the interrogation and refining of ideas provides further possibilities

Level 7 (Year 12) design thinking is characterised by a progression of initiating and exploring, interrogating, reviewing and refining of ideas, in the fields of spatial and product design. This means that specialist knowledge of how designers develop their design ideas by applying specialist literacy in either spatial or product design through the specialist knowledge and visual communication techniques described above.

Consideration and interrogation
Consideration and interrogation means thinking about design ideas, asking questions about the aesthetics and functionality of the design and comparing its positive and negative aspects. This consideration and interrogation enables the student to make informed decisions about evolving and progressing their ideas in relation to the brief context.
The brief context is not just restricted to the brief situation and specifications (appropriate at L6) but also connects with broader considerations that are associated with the design field's recognised practice and the student's personal perspective that they can bring to their design thinking and ideas.
For example: Designing a bach in the Coromandel.
The situation and specifications will describe the key considerations around the bach and its specific requirements. There will be broader considerations around bach design, including: The heritage of the New Zealand bach. The personal perspectives of the designer, their experiences (holidays, location, hobbies, interests, own style, etc).

DVC Learning Objectives L7 – Design Thinking (cont.)

For students to consider and interrogate their design ideas in aesthetic and functional terms, they will need questions to ask. The following table offers some leading questions to prompt students design thinking.

Thinking comparatively: benefits versus disadvantages

Try and consider as many aesthetic and functional aspects of the design idea.

Is the shape/form too big or too small, or just right?

Can people use the design easily? Does it fit a range of users? How does it operate? Is operating it intuitive or not? Is there enough space in the room for the furniture? Who would use this? What advantages does your design offer? Is it safe to use?

Why are the windows that size? Could they be bigger? Or smaller? Why would you change, what are the advantages?

Describe the benefits of the design idea		Describe the disadvantages of the design idea
1		
2		
3		

Critiques

Students design thinking can and should include input and collaboration with their classmates, friends and family, and their teachers. Critiques are events where groups share and construct thinking about ideas and issues. Critiques can use the questions from the "Thinking comparatively" list above. The following is a model to facilitate critiques, this should take place at regular intervals throughout the design process. It models collaboration and empathy, listening and thinking.

Critique

- Form a group (between 2 – 3 people. Too many and it becomes a presentation and limits other opinions).
- Each designer describes and explains their product, spatial design idea to the group.
- The group evaluates the design and suggests improvements. Comments are never personal or derogatory. The designer only listens and records the suggested improvements, unless asked for clarification.
- Each designer takes a turn.
- Designer reflects on and evaluates the suggested improvements and modifies and refines their design.

Record of comments:

Things to modify:

This critique model can be adapted in many ways, they can be formal (as above) or through informal discussions, by sharing and comparing ideas. Critiques should become common practice, where constructive questioning assists student's own reflection, review and confidence as they evolve their own design thinking.

As discussed in Level 6 Design Heritage, qualitative judgments and questions of taste are socially constructed; critiques help students question their own biases and help them learn to empathise with, and understand the opinion of others.

DVC Learning Objectives L7 – Design Thinking (cont.)

Divergent and **convergent** possibilities
As described in L5, divergent thinking occurs when design ideas are being generated that are different from each other, and further varied ideas are stimulated by these ideas. Convergent thinking occurs when design ideas are being selected, resolved and refined.
Students at this level are expected to understand that design thinking is divergent and convergent, sometimes one or the other, sometimes both at the same time. While in a convergent frame of mind, the constraints of the brief should guide their aesthetic and functional analysis, but they can step outside of this if an idea offers opportunity. They should also be familiar with design processes (these are discussed further in the following (In response to a brief) and how they enable and organise design thinking.

Specialist knowledge and design processes
The requirement for specialist knowledge also implies more in-depth engagement with design process, divergent and convergent thinking. The following describes a design process that might be used:

Level 7 (Year 12) design process

Situation: Examine the problem/need/opportunity in detail to potentially re-define. What else the situation could be?
Brief: With respect to an examination of the situation, how the specifications could be expanded or simplified. Specifications should not be too prescriptive or based on quantitative requirements (e.g. house hase four bedrooms, or a chair has four legs), but allows room for interpretation and alternative proposals. Specifications should also have coverage of both aesthetic and functional considerations and should be limited to between two and five points., more than this creates a checklist and loses the integrative, holistic nature of design thinking.
Research: Broaden the investigation of the problem, existing and alternate solutions, current practice and constraints. Provide fresh inspiration to redefine the brief.
Ideation: Ideation strategies could include the manipulation of shape, form and themes, working with alternative media and modes (blind drawing, collaborative exercises, creative tasks), playing with language devises and word definitions, exploring alternatives and variations before re-generating these as their own design ideas.
Ideation can use a range of potential starting points including; design movements, existing spatial or product designs, influential designers, natural themes (animals, plants, water, weather, etc), other man-made themes (fashion, music, architecture and products etc).
Initial ideas: Are divergent starting points thought of as potential ideas that may propose potential solutions to the brief.
Design development: Exploration and refinement of ideas. Generate many design variations, where the successive ideas are modified in response to their own aesthetic perception and functional considerations. This stage is generally convergent as a solution is evolved, but can also initiate new divergent thinking, thinking does not have to be constrained by the brief. Some ideas can form the nexus of something new. Refinement is the gradual improvement of the design idea based an analysis of aesthetics and functionality.
Collaborate: With others through discussion or critique throughout.

DVC Learning Objectives L7 – Design Thinking (cont.)

Presentation: Solution is visually explained, including rendering, working drawings, 3D drawings, digital model, models, photography.
Ongoing and final evaluation: Comparison of design solutions benefits and disadvantages against design considerations leading towards potential improvements, expressed visually, orally (in discussion) and recorded in writing if required.

Students need to practice and develop:

- In response to a brief is the framing of the design context in terms of the situation, specifications and broader considerations and implications.

At this level, the student needs to be more engaged with the construction of the brief and the parameters and constraints that it applies. This is part of the progression from the given brief at L6 (Year 11) to L8 (Year 13) where the student should be writing their own brief.
The teacher could provide the brief or develop it in conjunction with the students, or encourage students to define areas within the brief such as personalising the situation and the specifications.

DVC Learning Objectives L8 – Design Thinking

Demonstrate knowledge and skills in the **integration** of specialist visual literacy and designing for **ideation, initiating and resolving** design ideas in response to a brief context

Students need to practice and develop:

- *Integration* occurs when students are aware that their personal perspective and design thinking is informed by design heritage and utilises visual literacy developed through visual communication. And reciprocally they are also aware that their design thinking influences how they view Design Heritage, and how they utilise their visual literacy and Visual Communication skills.

This integration is evident in the student's work when they reflect on the connections between their sources of inspiration and their own design ideas, and when they use their visual literacy to inspire further design thinking.

- *Ideation* involves the interpretation of experiences, through visual communication strategies, as the underlying driver of initial ideas that are interrogated and re-generated towards potential design ideas.

Ideation involves creative strategies and techniques that allow students to use experiences from their lives and consciousness to generate ideas. Innovative ideas and thinking does not occur without stimulus; designers imagine what might be done within the situation by considering all its elements and alternatively they create experimental scenarios to generate possible ideas.
These strategies and techniques are enabled by visual literacy, particularly the ability to make images that communicate meaning. This becomes an iterative cognitive process where the student's images stimulate further ideas and act as the vehicle of not only communication but of interrogation and re-generation.

Ideation scenarios might include

- brain storm/blue sky thinking (no limits), lists, diagrams.
- what if scenarios, lists, diagrams.
- shape/form experimentation (no pre-determination of outcome), sketching and modelling.
- lateral/alternative thinking (left turn on the motorway), explanations, diagrams, modelling.
- reaction to: feelings and emotions, elements within the design situation, sound, etc, explanations, diagrams, modelling.
- using random modelling, experimenting with materials (some malleable such as clay, some pre-formed such as Lego)
- deconstruction; progressively deconstructing existing shapes/form, products, architecture and systems, sketching and modelling.
- Word play, using language devices, dictionary definitions, multiple meanings as an idea generator and manipulator.

DVC Learning Objectives L8 – Design Thinking (cont.)

Ideation selection, collaboration and critique
From the divergent ideas that are generated through the ideation scenarios, some are selected. As the design solution is probably destined for other people this selection should include collaboration and critique with the student's peers and teachers and should be encouraged.

DVC Learning Objectives L8 – Design Thinking (cont.)

- *Initiating and resolving design ideas* involves the evolution of ideas to a deliberate and considered conclusion

Initiating ideas (divergent thinking)
Initiating ideas can be early in a design process in terms of the overall idea, but can occur and reoccur throughout when there are new starting points required to components or parts of the overall idea
Selected ideations evolve into initial ideas by being re-explored through many iterations using vis-com techniques, particularly quick sketching and conceptual models, that allow for student reflection and response, and further interrogation and re-interpretation.
Initial ideas can be influenced by the potential of the design context, and are informed by questions of use and operation, shape and form, advantages, and constraints such as construction, manufacture, and cost, however students may consider more creative/alternative proposals at this stage.
Initial ideas are a range of possibilities that either offer potential solutions to the brief, or they redefine the brief (see below). A range of initial ideas should be generated to allow for further comparison of their benefits and advantages, and significance and to provide opportunities for more experimentation and possible synergies.
But the purpose of design is to propose a new solution, to deconstruct conventional wisdom and imagine an alternative, consequently, ideation continues within initial ideas and students should continue to use the ideation strategies above.

DVC Learning Objectives L8 – Design Thinking (cont.)

Resolving ideas: Divergent and Convergent thinking
Selected initial ideas are evolved to a deliberate and considered conclusion. Each design element, and its inter-relationship with the whole is explored, improved and refined.
It is expected at this level that the solution is resolved to an outcome that considers all the specifications of the brief, the wider environmental conditions and human factors, and further potential imagined through their design thinking.

Depending on how the student's progress their design thinking (some will be driven by the details, others by the overview, some may do both simultaneously), it is important that an overview of the design solution is maintained as each design element is progressed and improved. The inter-relationship between the design elements and the whole is changed each time a design change is made; each design element is affected by and influences the other, and they all affect the whole.
While resolving design ideas is essentially convergent thinking, opportunities will emerge where further ideation and divergent thinking can and should take place, earlier ideas may be drawn upon and added to the design resolution.

Student's need to bring their own perspective to the comparison of the benefits and potential of their design ideas as they analyse the design context and resolve their design thinking; they should be aware of their own preferences as they make judgments during comparison of benefits, advantages, and significance. This should be made clear through their explanations and visual communication.

Visual Literacy and Design Narrative
Design and design thinking exists as a personal activity but is validated in a public forum. Visual advocacy and clarifying of students' design ideas is an integral part of design thinking, as is the use of visual communication to express a design narrative. The use of summary sets of images as part of informal critiques (between students, to the teacher, to the client/user) during the process or the more formal conclusion in terms of a set of final drawings or exhibition work for a wider audience, are key to design thinking to be more accessible to others.

DVC Learning Objectives L8 – Design Thinking (cont.)

Students should be aware that there are wider societal themes beyond aesthetics and function that they could include in or base their design thinking on. These could include:

Motivations beyond Aesthetics and Function

1.	Conservation	A desire for small size to minimise volume, weight and the eco footprint, or conversely wishing to stand out.
2.	Familial	Open plan living to facilitate family togetherness, or private spaces.
3.	Social	Products that suit the elderly, or are adjustable to suit differences, make things easier for people. Conscience, social responsibility, past, present or future.
4.	Sustainability	Sustainable material usage. Utilising found materials. Improve efficiency of existing things.
5.	Symbolism and representation	Symbolism: of power, social, political significance, gender and cultural identity.
7.	Worthiness	Why do you want to be involved in designing it?
8.	Aspiration	For the greater good or wanting to be richer, desire for more, or just better?
9.	Invention	Innovative: doesn't already exist, risk taking
10.	Empathy	Architectural narrative; where the building that "tells a story", that communicates a series or sequence of visual / spatial statements. The building whose lasting impression is an emotional / spiritual experience, rather than a memory of what the bricks and mortar were like.
11.	Consumerism	Global footprint reduction. Buying things beyond having a need.
12.	Ethical	Personal values, beliefs.
13.	Globalisation	The world as a single economy and the effects of cheap labour markets and local economies.
14.	Neo-Liberalism	Transferring state social responsibility to individuals; individual choice and responsibility.

DVC Learning Objectives L8 – Design Thinking (cont.)

Design process

At this level, the use of design processes becomes less hierarchical; students don't have to start with a brief. Design processes are not always linear or vertical, or horizontal. They can be reactive, re-iterative and reciprocal.

Observation **Presentation**

Research **Evaluations** **Situation**

Initial ideas **Design development and variations**

Ideation **Brief**

For example, students may visit a site with the intent to make observational sketches to serve as inspiration for ideation. This could prompt research into similar (or contrasting sites) that may lead to an initial idea that a brief is develop from.

Or, a collaboration and critique on a design idea leads to design variations. The students don't have to engage with all the stages of the design process.

Students should establish their own brief; this may be informed by ideation, or visits to exhibitions, movies, social situations or by personal experience.

DVC Learning Objectives L5 – Visual Communication

Develop skills in **drawing and layout**

Students need to understand that:

- *Drawing* is the communication of design thinking through media, materials, equipment, and drawing systems.

Media, materials and equipment includes:

Pencils	6B, 5B, 4B, 3B, 2B, B, H, 2H, 3H, 4H, 5H, 6H. 6B is the softest and the darkest, 6H is the hardest and the lightest.
Pens	Sizes of the nib widths vary with each manufacturer.
Colour pencils	Available in water soluble or wax based. Come individually or sets in a wide range of colours.
Markers	Water based or solvent based design markers and felt pens. Come in varying width, grey tones and a wide range of colours.
Set squares	Plastic guides, normally 45/45/90 degrees, 30/60/90 degrees. Often come with one edge as a ruler.
T squares	A long ruler in the shape of a T used to guide horizontal lines on drawing boards.
Drawing boards	A flat surface to secure drawing paper while being drawn on. Some can be angled up from the horizontal.
Compass	A tool for drawing arcs and circles.
Paper	Comes in different weights (thick and thin), some have a texture. Available as loose leaf, pads and visual diaries.
Computer drawing; CAD	2D drawing and 3D modelling programs.
Computer illustrating programs	2D computer assisted drawing programs.
Computer rendering programs.	Programs that enable rendering of 3D images generated through modelling programs.
Image manipulation programs	Programs that enable editing of images.

Drawing systems: include geometrical construction, understanding of shape and form. Shape is two-dimensional, it describes elevations (profiles, silhouettes). Form is three-dimensional. In DVC form is described using drawing systems such as isometric, oblique etc.

DVC Learning Objectives L5 – Visual Communication (cont.)

Drawings can be either freehand or Instrumental:
Freehand drawings are unaided by instruments and rulers. These drawings (sketches) can be quick and schematic line drawings, known as *rapid visualisation*, (or *rapid viz*), or more neatly drawn and include rendering techniques.
Instrumental drawings are aided by instruments and rulers (including computers). Instrumentally constructed drawing are usually orthographic drawings, paraline drawings and perspective drawings (although each of these drawing systems can be drawn freehand).

As computer software is becoming increasingly available, both for drawing and design, it still needs to regarded as a tool. While computer aided drawing (CAD) will have its own set of techniques and processes, the core intentions of visual communication, visual literacy and drawing systems remain the same, whether the drawings are digital or not.
Note that AS91063 and AS91066 (both L1) remain as the only standards that specifically access manual drawing skills and therefore currently exclude digitally generated work. All other standards freely allow evidence to be either digital, manual or combinations of both.

Drawing systems and methods	
Geometry	Construction of lines, angles and shapes: measure and divide straight lines and arcs, construct perpendiculars, bisect and trisect angles, circle geometry and tangencies, construct triangles, quadrilaterals, polygons, and ellipses.
Orthographic	2D system: sets of elevations/views linked by projection and conventions.
Paraline; isometric	3D system: a facing axis with all sides projected at 30 degrees to the horizontal.
Paraline; oblique	3D system: a facing elevation with all sides projected at any angle (usually 30 or 45 degrees).
Paraline; planometric	3D system: a plan elevation angled to the horizontal with sides projected vertically.
Perspective	3D system: One and two-point diminishing scale.
“9” Heads	Fashion: Body proportion (legs are elongated).

Line hierarchy describes the weight or thickness of lines which can determine where they are used. There are many other types of lines in orthographic drawing to describe formal information e.g. centre lines, reference planes.

Light lines	Construction lines (used for crating and indicating projection).
Medium lines	Dimension lines and section lines (used for showing internal technical information such as measurements, section and internal information, etc).
Dark lines	Outlines (used to show the outside edges and profile of a form and shape, arrow heads and text).

DVC Learning Objectives L5 – Visual Communication (cont.)

Rendering is applying tone to indicate the relative shade generated on a form by a light source, i.e. surfaces facing the light source are lighter in tone than those at an angle. It is used to describe a 3D effect. On rectangular forms, there are usually light, medium and dark tones indicated, on a curved surface the tone graduates from light to dark.
Rendering also includes the use of colour to indicate aesthetic (and some functional) decisions.

DVC Learning Objectives L5 – Visual Communication (cont.)

- *Layout* involves the composition of visual information to describe and promote ideas.

Includes understanding of:

Compositional principles	**Definition**
Organisational grids	Page is divided into columns and rows.
Alignment	Vertical and horizontal, or diagonal.
Focal point	Where the eye is drawn to.
Positive and negative space	Space occupied or empty; consideration of the balance between.
Hierarchy	Relative importance of words, headings, images and space.
Proximity	Relative nearness of words, headings, images and space.
Contrast	Dominance of colour or tone.
Repetition	Repeated use of design elements and the rhythm generated.
Proportion	Relative size of shapes, forms, images and spaces.

Display and Visual Communication; visual literacy

In DVC, design thinking is destined to be communicated to others. Students are expected to present their design thinking and solutions in a forum for others to view and discuss, where the layout of their design thinking will affect how others understand it.

Layout enhances the visual communication of the ideas. Students should be encouraged to link each drawing or sketch to other sketches to make them aware that the purpose of the drawings is to tell a story about their thinking and their solutions. Successive drawings and sketches on paper (or on screen) in a sequence, create a narrative and leads the viewer from one idea to another as the student's problem-solve and create new possibilities, hopefully to a conclusion. This is visual literacy; the ability to make meaning from images, and to make images that communicate meaning. It doesn't just rely on however, on singular drawings, rather a combination of drawings and their sequence.

Students need to be made aware that the effectiveness of their visual communication and their visual literacy depends on the clarity of their drawings (line work, neatness, accuracy) and the composition of sequences and groups of drawings by using the compositional principles described above.

Planning

Students should show the planning and development of their layout. Planning is done through "thumbnails" (small sketches) and rough diagrams, and describes the possible layouts they might use before selecting one and developing it. This involves design thinking and decision making, e.g. what organisational grid might be used after considering a variety of different grids? The judgments about what they prefer, this not only indicates design thinking, but also the student's developing awareness of their own taste and style.

DVC Learning Objectives L5 – Visual Communication (cont.)

Planning may also be done on computer; however, students should record screen shots as evidence.
For a final presentation, computers offer unmatched facility for manipulating typeface (sizes, bold, italic, letter spacing), reducing and enlarging images, and offer the possibility of digital presentation through slideshows, embedded video, sound, 3D modeling fly throughs and animation, as well as printing.

DVC Learning Objectives L6 – Visual Communication

Demonstrate skills in **applying representation and presentation techniques**

Students need to understand and apply:

- *Representation techniques* are the use of drawing systems to communicate the meaning of design ideas through shape (2D) and form (3D).

Students are not only required to develop their skills in using representation techniques using both freehand sketches and instrumental drawing but to also communicate and describe design features. This communication must also include the generation, exploration and selection of their own design ideas.
When beginning freehand sketching, students use a pen or pencil to sketch unguided lightweight construction lines in a technique known as "crating". The purpose of crating is to make judgments about size and proportion; getting the design idea looking correct. As crating uses lightweight lines, students can draw multiple lines until the desired size, shape and form is reached. When the size, shape and form is reached then outlines are used to darken the chosen lines.
Proportion and relative size can be communicated by sketching the product being used by people and other recognisable objects, and showing how it is operated. A spatial design should include people, windows, doors and furniture within the space.
Multiple views: students should be encouraged to sketch a range of views (from different view-points and angles) of their design. These views encourage the student to interrogate their own design decisions and communicate greater detail to others.
Sketching the construction, operation and assembly of design ideas should be encouraged. Many design ideas include are more than just an exterior, they may include different rooms, include mechanisms, show pattern and garment construction techniques (facings, linings, clipped seams, darts, pleats and pattern pieces), and/or are made up of several components including their construction components such as screws, hinges and joints, notions, seam types etc. These should be described and explained using sequential, exploded and cut-away sketches.

There are different benefits in using either digital or analogue tools to communicate design thinking. Digital tools suit modelling approaches; the ability to rotate the viewing of 3D objects. Analogue tools (i.e. rapid viz design sketching) suits quick interrogation of ideas; the ability to fluidly modify ideas and show thinking more explicitly. Selecting either digital or analogue should depend on the relative advantages as well as access and skill.

Rendering
Rendering is the application of tone and colour on 3D sketches to show the effect of light and enhance the appearance of depth and texture. Using colour is both a functional and an aesthetic design decision. Colour is used to describe the materiality, texture and surface finish. It can be used to make design components stand-out or blend in, or can accentuate an operational component, drape of material texture (e.g. fur), the effect of drape on a pattern. Using colour in rendering projects the 3D effect forward, accentuating the perception of depth.

DVC Learning Objectives L6 – Visual Communication (cont.)

Modelling/ Model-making
Models can be regarded as a communication technique (as well as a thinking tool). Models can be rough and conceptual that allows the designer ideation sources or rapid forms that help visualise an idea for further inspiration. Models can be accurate scaled versions of the design idea, helping the designer communicate their thinking to others, or to evaluate their design decisions. Models are three dimensional; this allows the viewer to select and change the viewing angle. Scale models can be intricate and difficult to make with precision. Spatial models can include model humans to indicate scale and proportion. Models can be constructed with removable parts that allow the viewer to see the interior. Models can be made to have operational components; they can be working prototypes. In fashion, toiles are used to test, mock-up and model garment ideas. Models, while time intensive to make, usually don't require a lot of material, therefore are not expensive. Models can assist in sketching design variations by using photographs and tracing techniques.

Orthographic projection
The principals of orthographic projection are the understandings that underpin effective working drawings for product and spatial designs. Orthographic drawings are a set of plans and elevations that are linked together by projection (alignment). In New Zealand, orthographic drawings are drawn in third angle projection, which dictates the layout order of the plans and elevations. Plans are "birds eye" views and elevations are views perpendicular to plans. They have a range of conventions that govern them and derive from New Zealand standards, however, they also include teaching and learning conventions that are designed to help student understanding.
While orthographic drawings describe the result of design decisions, they are also part of design thinking where designers must commit to sizes and measurements. It is at this stage that some design decisions need to be re-considered due to inadequate allowances for space, tolerances and use.
Orthographic drawings require accurate measurement and precise line work, particularly when drawn by hand. CAD programs for orthographic drawings are increasingly available, however, teachers need to weigh up the time it takes to learn a CAD program and its inherent accuracy and precision against the immediacy and simplicity of understanding of hand drawing.
Architectural drawings often don't conform to all the orthographic conventions.

Paraline drawings
Paraline is a collective term that defines non-perspective drawings. It includes: isometric, oblique, planometric, dimetric, trimetric. While knowledge of all these systems/styles is informative, the ability to use at least one is required.

Isometric drawings
Isometric drawings are constructed from an edge with the sides projected at 30 degrees to the horizontal (this is a practical description, there is a more theoretical basis to this). It looks similar to 2 point perspective but without the effect of diminishment.

Oblique drawings are often used in product design, particularly furniture. From a front elevation, the sides are projected at an angle, usually 45 degrees. If the drawing is to scale the projected sides can appear too long, often the sides are reduced in length to make them appear visually correct. Refer to oblique cabinet and cavalier drawings.

DVC Learning Objectives L6 – Visual Communication (cont.)

Planometric drawings
Planometric drawings are most often used in architecture, they consist of a plan view that is rotated at an angle to the horizontal and the sides are projected vertically.
If the plan view has been rotated 45 degrees it can be also be classified as dimetric. If the plan view has been rotated 30 degrees it would be classified as trimetric.

Fashion illustration
Fashion illustration uses freehand sketches/drawings related to garments and fashion textile products. It includes the “9 Heads” fashion figure system to show a garment’s front, back and side views being worn. It shows an exaggerated proportion of the design, fabric drape and a 3D context.
Also includes 2D and 3D line drawings of notions (zips, buttons, domes etc), design elements (pleats, gathering, top-stitching etc), and working drawings (pattern pieces) that compliment and aid the communication of the design idea.
Croquis drawings are quick 3D sketches of a figure overlaid with a loose drawing of the garment. Commonly, a number of these are done from different viewpoints to explore proportion and style.

DVC Learning Objectives L6 – Visual Communication (cont.)

Students need to understand and apply:

- *Presentation techniques* are the organisation of visual information to communicate the meaning of design ideas.

The prior knowledge of layout at Level 5 (Year 9/Year 10) is extended by the addition of narrative and the use of layers.

Function term	**Definition**
Organisational grids	Page is divided into columns and rows.
Alignment	Vertical and horizontal, or diagonal.
Focal point	Where the eye is drawn to.
Positive and negative space	Space occupied or empty; consideration of the balance between.
Hierarchy	Relative importance of words, images and space.
Proximity	Relative nearness of words, type and images.
Contrast	Dominance of colour or tone.
Repetition	Repeated use of design elements and the rhythm generated.
Proportion	Relative size of shapes, forms, images and spaces.
Narrative	Communicating a story: dictating the direction, flow and movement of design ideas in a presentation. Use of multiple pages.
Layers	Backgrounds and themes.

Narrative

It is expected at this level that presentation techniques communicate the design thinking about a design idea. This may include the progression of the idea from ideation, through initial ideas, development to a final solution. Alternatively, the presentation may focus on the design decisions that have been made through a range of drawings including cut-away views, different angles and renderings. The student's visual literacy is also developed through their selections of the visual information to be presented. This is in effect a critique of the visual communication and may prompt further sketches and drawings to be produced, or edited to make "images that communicate meaning". Students need reminding that while they are intimately familiar with their idea, their audience needs a more detailed explanation.

A narrative is a visual story, from an introduction to a conclusion. A common organisational device is the western reading default, left to right, top to bottom, known as the "Z".

The context of the design problem and brief can affect the presentation and organisation of the visual communication. Students are expected to research existing product or spatial design presentation techniques as well as creating their own unique approach.

The amount of visual information to be communicated may require multiple pages to give appropriate emphasis. Limiting a narrative to fewer pages can lead to students filling all the available space on a page with subsequent small images, losing detail and impact.

The proposed audience needs to be considered. In most cases the audience is either the teacher, their peers or family, however, encouraging students to take the perspective of the audience is also a critique and can lead to further development of layout and composition.

DVC Learning Objectives L6 – Visual Communication (cont.)

Layers
Background colours and watermarks are techniques that can be used to add visual interest and depth to presentations. Consistent use of headings and design explanations provide continuity over multiple pages

Model-making
Models can be regarded as a presentation technique (as well as a thinking tool). Models offer a tangible presentation that enables the audience to examine at their own rate. Models are three dimensional and allows the viewer to select and change the viewing angle. Scale models can be intricate and difficult to make with precision. Spatial models can include model humans to indicate scale and proportion. Models can be constructed with removable parts that allow the viewer to see the interior. Models can be made that have operational components. Models can be supported by other 2D media. Models while time intensive to make, usually don't require a lot of material and are relatively inexpensive.

Models and photography
Students should be taught to photograph models well with telephoto views, wide-angle views and macro lenses for detail views, using lighting; photographed in a dark room with an interior light or a back light. Photographs of models can be clear cut and pasted onto backgrounds to communicate it in an intended context. A model can be photographed showing its construction, or its de-construction to communicate its interior details. In fashion, a calico toile is a form of model that can either present a design idea or serve as an exploratory stage of development.

Digital skills
If facilities are available, students should be introduced to scanning, digital photography, and the use of simple reproduction tools and techniques such as a photo-copier. Scanning and digital photography is the digitisation of sketches and drawings to enable them to be uploaded into digital programs and documents for manipulation including scaling, cropping, cutting and pasting, as well as image work such as colour and tone manipulation. It also means that students need to understand the pre-requisites and effects of these manipulations. The most obvious is the insufficient resolution of a scanned image leading to pixilation and lack of clarity when cut and pasted. This is often a result of digital photography with cell phones set at a low resolution, as well as sourcing images sourced from the internet.

Presentation planning
As described in the previous level, students need to plan their presentation. It is a design process of initial ideas and development. With the inclusion of narrative and layers, students must show that they have explored design variations, evaluated them and developed their solution.

Display and Visual Communication
In DVC, design thinking is destined to be communicated to others. Students are encouraged to present their design thinking and solutions in forums and critiques for others to view and discuss.
The layout of their design thinking will affect how others understand it.

DVC Learning Objectives L7 – Visual Communication

Demonstrate a narrative by applying **specialist representation and presentation** techniques.

Students need to apply:

- *Demonstrate a narrative* is about describing design thinking progressively. At this level, the emphasis moves to how students use their visual communication skills and techniques to show the progression of their thinking and their solutions.

At the previous level (L6, Yr 11), students developed a visual literacy by learning representation skills. At this level (L7, Yr 12), students are expected to utilise these skills to describe and communicate their initial ideas, design variations, development and refinement **to communicate the progression of thinking in their design process.**

Students need to apply:

- *Specialist representation* is the use of drawing systems to communicate design thinking appropriate to a spatial or product design context.

Specialist representation includes the drawings and the visual language used in either spatial or product design. The drawing systems discussed in the (L6, Yr 11) visual communication objective are expected to be reinforced and used at this level. Instrumental perspective projection can be introduced into teaching and learning programmes at this level if it hasn't been previously. Drawing systems can be produced by freehand, instrumentally or computer assisted.
These are also identified in the Design Thinking objective.
This involves the student developing their own visual literacy by being aware of, and using the specialist visual communication techniques and technical knowledge to express their own thinking.

Spatial Design visual communication techniques and their uses

1.	Bubble diagrams	To identify the spaces, their proximity and inter-connection in a visual form. Usually used early in design thinking when working out parameters.
2.	Paper architecture	Simple conceptual forms that are easily made and can be viewed easily from many angles.
3.	Topographic models	Layered contours making a 3D form of the architectural site.
4.	Floor plans	A section view of the floor, rooms, walls, doors and windows.
5.	Sections and elevations	Elevations of individual walls and sections through the building to show the relationship of spaces and structure.
6.	Architectural drawing systems	Usually Isometric, planometric and perspective to show exterior form, relationship to context, scale and nature/character of interior spaces. CAD (computer aided drawing); there are numerous systems available.
7	Rendering	Colour and tone used to indicate materials, and light and shade. Can include site environment.

DVC Learning Objectives L7 – Visual Communication (cont.)

8.	Photo-montage overlay	Photos of existing buildings are combined with drawings.
9.	Tracing	Over images of existing buildings. Helps to get proportion correct before developing own ideas. Tracing over own design allows rapid development without having to re-draw all components.

Product Design visual communication techniques and their uses

1.	Rapid sketching: crating and outlines	Using selected drawing systems to lightly and roughly frame/crate shapes and forms, then outline. Simple conceptual forms that are easily made and can be viewed easily from many angles.
2.	Drawing systems	Isometric, oblique, planometric.
3.	Design variations and views	Multiple versions of a shape/form grouped together. Sketch from different angles to see the other side. Cut-away views to see internal detail.
4.	Rendering	Apply tone to show 3D effect and colour to communicate aesthetic and material features.
5.	Photo-montage	Adding own drawings over photos of existing products.
6.	Tracing	Over design ideas to quickly produce variations.
7	Product working drawings	Sets of drawings that are linked with appropriate conventions, labelling and symbols to explain specialist information.

DVC Learning Objectives L7 – Visual Communication (cont.)

Students need to apply:

- *Specialist presentation techniques* is the organisation of visual information in terms of compositional principles (see a list below), and the use of modes and media in a spatial or product design context.

Specialist presentation techniques to compose a presentation of a design involves the compositional principles from level 6 (Yr 11): organisational grids, alignment, focal point, positive and negative space, hierarchy, proximity, contrast, repetition, proportion, and the addition of narrative, format and scale/size.

Compositional principles	**Definition**
Organisational grids	Format is divided into columns and rows.
Alignment	Vertical and horizontal, or diagonal.
Focal point	Where the eye is drawn to.
Positive and negative space	Space occupied or empty; consideration of the balance between.
Hierarchy	Relative importance of words, images and space.
Proximity	Relative nearness of words, type and images.
Contrast	Relative nearness of words, type and images. Dominance of colour or tone.
Repetition	Repeated use of design elements and the pattern or rhythm generated.
Proportion	Relative size of shapes, forms, images and spaces
Visual Narrative	Communicating as a story. The presentation could also include multiple pages.
Format	Ratio of vertical to horizontal. Recognition of “A” system, Golden ratio, Fibonacci series.
Scale/size	Relative size.

Visual Narrative
Students should be anticipating how they will organise their design thinking through their visual communication. The combination of sketches, drawings, models and CAD modelling that they generate are produced sequentially.

Format
Students tend to accept the default formats of the “A” paper system, or the computer screen. Challenging them to experiment with different widths and heights, research into the Golden ratio and the Fibonacci series, and using these as a format is enlightening.

Scale/size
Making presentations bigger or smaller can add impact. Both are unexpected and challenge the viewer’s expectation. Large scale presentations can dominate a presentation space and communicate a lot of detail.

DVC Learning Objectives L7 – Visual Communication (cont.)

Students may select any mode. The arrangement of visual information presumes either 2D paper or computer screen, or 3D modelling, toiles and mannequins, however, it is fully expected that they use computer applications (e.g. Photoshop, Illustrator, Inkscape, Publisher, Word, PowerPoint, photography, image manipulation, digital modelling, animation etc). Other modes may include a range of conventional drawing and modelling methods.
Students may also select any media. These could include: computer programs or traditional media such as pastels, airbrush, colour pencils, collage, marker pens, paint, gouache, card, and paper.

Teaching and learning programmes need to consider that for students to become proficient with computer applications can absorb a lot of time at the expense of curriculum. If computer applications are expected to be used, they should be introduced at an early stage so students can develop their proficiency. Thought should be given to computer applications that students can access outside of class so they can practice independently.

DVC Learning Objectives L8 – Visual Communication

Communicate a visual narrative by **integrating** specialist representation and presentation techniques

Students need to understand and apply:

- *Communicate* means there is a viewer that the narrative is addressed towards.

Students are expected to visually present and promote their resolved design ideas and solutions, using their visual literacy to a forum. The student's narrative is visually communicated without the student present. How the audience is enabled to "interact and read" the presentation is important, including the forum/space that presentation exists in and the ability of the audience to move around and change their viewpoint. Students need to include the specialist representation and presentation techniques from the previous level; this would mean researching how Architects, Product Designers, Fashion Designers and Graphic Designers would present their design thinking and solutions.
Students need to plan and develop their presentation and to show evidence of initiating presentation design ideas, critiquing and evaluating these, selecting and developing preferred options. They need to include the compositional principles from the previous level and apply these to a three-dimensional space.
Wall versus space; care should be taken in selecting a space for a presentation at this level. Simply selecting wall space can limit a presentation to two dimensions and limit the audience interaction to the distance and angle at which they view the presentation. Selection of a space in which to present offers three-dimensional potential for display of models, visual diaries, tablets and screens as well as greater audience interaction.

DVC Learning Objectives L8 – Visual Communication (cont.)

The following are suggested aspects in planning and producing a presentation:

Presentation planning: student's need to show evidence of consideration and selection of the following.

Modes	2D paper or computer screen, or 3D models: Photoshop, Publisher, Word, PowerPoint, photography, image manipulation, Digital modelling, animation. Other modes may include a range of conventional drawing, and modelling
Space	Identify the spaces, their proximity and inter-connection in a visual form. Usually used early in design thinking when working out parameters.
Potential audience interaction	How does the audience access and move through the presentation space? What choices can they make?
Specialist presentation research	Showing research of existing specialist presentation modes, and analysing how they are effective. Considering alternative presentation modes.
Presentation concepts and critique	Using thumbnails and concept models to propose presentation ideas that are then critiqued and analysed in terms of the audience and the effectiveness of the presentation.
Develop selected presentation mode	Using the analysis above generate presentation modifications and refinements, continually critiquing, analysing in terms of the audience and presentation effectiveness.
Construction of presentation	After decisions and conclusions are made about the development of the presentation. Record photographically.
Analysis of audience interaction	Record how the audience inter-acted with the presentation. Analyse the effectiveness.
Evaluation of presentation effectiveness	Did the presentation communicate the intended messages? Was it convincing, did it have impact?

DVC Learning Objectives L8 – Visual Communication (cont.)

Students need to understand and apply:

- *Integrating* is the coherent amalgamation of drawing systems, graphic materials and equipment, and visual promotion for the purposes of articulating a visual narrative of design thinking and ideas to a forum.

Integrating means students are expected to apply their visual literacy to explain their design thinking and present their resolved design ideas and solutions. They are required to selectively utilise drawing systems, graphic materials and equipment that they consider best supports the communication of their thinking.
Students may select whatever mode that is suitable. The arrangement of visual information presumes either 2D paper or computer screen, or 3D modelling, however it is fully expected that they use computer applications (such as: Photoshop, Illustrator, Publisher, Word, PowerPoint, photography, image manipulation, Digital modelling, animation etc. Other modes may include a range of conventional drawing, and modelling.