

# Technology programme design:

## GRAPHICS 2011 WELLINGTON HIGH SCHOOL

Year 11

Curriculum Level 6

**Rationale:** Graphics is a subject that engages students in purposeful study of drawing and design and challenges them to develop and communicate design ideas. The study of Graphics enables students to conceptualise, develop and communicate design ideas and potential outcomes, and provides them with skills to interpret and communicate visual information in other learning areas. The growing role of visual communication within contemporary society demands that students develop their ability to interact critically with and interpret visual messages. Students who develop this ability, together with an understanding of design, will be better able to recognise and predict the potential future influences on, and impacts of, visual communication and design in their own and others' practice and outcomes. Students studying drawing and design and undertaking graphics practice gain knowledge and skills that enhance their ability to visualise, reason, and make informed decisions.

**Course description:** This course allows students to develop skills and practices in a range of drawing, presentation and visual communication techniques. Students will work through two minor and one major unit of work that will involve a range of scenarios and learning opportunities in the areas of spatial design and product design. It is intended that previous learning from years 9 and 10 Graphics is built upon, as well as the Year 11 course itself providing a series of reinforced and built-upon key concepts.

**Course Duration:** Year 11 Graphics is a year-long course, 4 hours a week.

### Learning objectives:

#### 6.1

**Component One: Visual Communication:** Students will demonstrate of and skills in fundamental visual communication techniques.

*Indicators:*

- Create 2D and 3D freehand sketches that show in-depth design features in proportion relative to the context of the design brief to convey the intent of the design ideas.
- Produce accurate instrumental 2d drawings that show in-depth information about technical features of a design
- Produce accurate paraline drawings that show in-depth information about design features
- Skilfully apply rendering techniques to convincingly communicate shape and surface qualities, enhancing the realistic representation of design qualities to an audience
- Use rendering techniques to communicate the form of design ideas.
- Skilfully plan, select and apply presentation skills that are of a high quality showing accurate layout skills, and visual impact to tell a story.

#### 6.2

**Component Two: Graphics practice:** Students will demonstrate ability to explore and develop design ideas by applying visual communication and design techniques in response to a brief

*Indicators:*

- explore and refine design ideas by considering possible alternatives;
- integrate principles of aesthetics and function, and design judgements, in a coherent and connected way to develop design ideas;
- convincingly communicate design ideas visually in accordance with the context specified in the design brief.

#### 6.3

**Component Three: Knowledge of Design Practice:** Students will demonstrate understanding of design principles and processes, and the work of influential designers.

*Indicators:*

- select and research an influential designer
- identify and explain the aesthetic and functional characteristics of their chosen influential designer
- integrate aesthetic and functional characteristics of chosen influential designer when developing their own design ideas

## **General outline of project for year course:**

### **Project one: Entrée**

This project is a warm-up, starter, entrée, to Year 11 Design and Visual Communication, a.k.a. Graphics. Students design a set of cutlery for a specific purpose as chosen by individuals. The intention is that conceptual thinking, design and communication of ideas through drawing will be emphasised and prioritised. If students can take up this challenge, they will be able to confidently participate in the rest of the year's learning, as the skills from this entrée will be built upon in the remaining project work.

### **Project Two: Designer Postcard**

This project aims to widen students' knowledge of designers while engaged in designing a postcard. The success of this product relies on understanding and application of layout principles and communication of key ideas and characteristics. It also allows further experience and understanding of the development stage of the design process before it is assessed in the following project.

### **Project Three: Rooftop Hideaway**

This final project holds the most opportunities for students to consolidate their learning and apply prior learning within an architectural design context. While challenged to design a small dwelling they are also exposed to a range of learning opportunities that allow for meaningful development of ideas and diverse outcomes. The project culminates in a class exhibition that allows an authentic context and audience in which to practice their visual communication skills to showcase their developed design ideas.

Unit Title: <b>Entrée: Project one</b>			<b>Graphics</b> Technology Faculty Wellington High School
Class: <b>GRA112 – Year 11 Graphics</b>	Duration: <b>9 weeks</b>	Curriculum level: <b>6</b>	

**Description of context:**

**Situation:**  
Cutlery in its many shapes and forms is used across various cultures, in a range of occasions, and by people with diverse needs and abilities. It ranges from purely functional, basic design to novelty, quirky and humorous and can also be regarded as high-end design pieces.

**Brief:**  
Design a range of cutlery for a specific character, meal, event or culture.

**Specifications:**  
The design must consider the following.....

- A knife, fork and spoon that is an obvious set/collection
- Appropriate materials and components
- Ergonomics and user friendliness

**Class Description / history / prerequisites:**

This class comes from a range of experiences and backgrounds, as well as having extremes in their Graphics subject knowledge and experience. Prerequisites follow on from previous projects in year 10 where skills in freehand drawing, orthographic drawing and pictorial instrumental drawing can be built on.

**Key focus: Skills, knowledge, terminology:**

**Skills:**  
Research, freehand drawing, instrumental 2-D and 3-D drawing, rendering, design language use for development of concepts.

**Knowledge:**  
Materials, components, ergonomics.

**Terminology:**  
Aesthetic and Functions principles including the derived elements: Aesthetics: movement, pattern and rhythm, proportion, balance, harmony and contrast, and style. Function: strength and stability, efficiency, reliability, fitness for purpose, user-friendliness, and ergonomic fit.

**Learning objectives:**

**Component 1: Visual Communication:**

Students will demonstrate of and skills in fundamental visual communication techniques.

**Component 2: Graphics Practice:**

Students will demonstrate ability to explore and develop design ideas by applying visual communication and design techniques in response to a brief

**Component 3: Knowledge of Design Practice:**

Students will demonstrate understanding of design principles and processes, and the work of influential designers.

**Learning links:**

Key competencies:	Values:	Cross-curricular:
Thinking Using language, symbols and text Managing self Relating to others Participating and contributing	Excellence Innovation, inquiry and curiosity Diversity Equity Community and participation Ecological sustainability Integrity	English The Arts Health and PE Languages Mathematics Science Social sciences Technology

**Learning Outcomes:**

As linked to indicators – Students will:	As linked to key competencies/values/cross-curricular – Students will:
Indicators: (6.1) <ul style="list-style-type: none"> <li>• Create 2D and 3D freehand sketches that show in-depth design features in proportion relative to the context of the design brief to convey the intent of the design ideas.</li> <li>• Produce accurate instrumental 2d drawings that show in-depth information about technical features of a design</li> <li>• Produce accurate paraline drawings that show in-depth information about design features</li> <li>• Skilfully apply rendering techniques to convincingly communicate shape and surface qualities, enhancing the realistic representation of design qualities to an audience</li> <li>• Use rendering techniques to communicate the form of design ideas.</li> <li>• Skilfully plan, select and apply presentation skills that are of a high quality showing accurate layout skills, and visual impact to tell a story.</li> </ul>	<ul style="list-style-type: none"> <li>• Use critical thinking to and decision making to develop design ideas</li> <li>• Question their design ideas by asking “what would happen if”</li> <li>• Persevere with challenging design problems in order to explore the range of possibilities</li> <li>• Take risks by showing the range of design approaches to the given brief</li> <li>• Planning for presentation depending on resources and time available in order to manage self</li> <li>• Make links with science and the properties of metals to further inform design development</li> <li>• Have opportunities to explore sustainable materials through development of design ideas</li> <li>• Relate to others by working with photographing each other and discussing ergonomic restrictions and considerations</li> <li>• Consider the needs of others/chosen character when writing</li> </ul>

<p>Indicators: (6.2)</p> <ul style="list-style-type: none"> <li>explore and refine design ideas by considering possible alternatives;</li> <li>integrate principles of aesthetics and function, and design judgements, in a coherent and connected way to develop design ideas;</li> <li>convincingly communicate design ideas visually in accordance with the context specified in the design brief.</li> </ul> <p>Indicators: (6.3)</p> <ul style="list-style-type: none"> <li>select and research an influential designer</li> <li>identify and explain the aesthetic and functional characteristics of their chosen influential designer</li> <li>integrate aesthetic and functional characteristics of chosen influential designer when developing their own design ideas.</li> </ul>	<p>specifications</p> <ul style="list-style-type: none"> <li>Begin to explore drawing conventions as a tool for communicating visually – using language, symbols and text.</li> <li>Utilise and apply numeracy skills in terms of drawing to scale and measurement of existing products.</li> <li>Make links between use of colour, rendering, tonal techniques etc in art by exploring a range of media and techniques.</li> <li>Make links with cultural areas of interest in terms of tradition, events, and needs of others</li> <li>Produce quality final presentation pages and setting high personal aims – striving for excellence</li> </ul>
--	---

### Assessment strategies and NCEA Standards:

There will be no final grade for this project. This work, along with future projects will contribute to the portfolio of externally assessed standards at the end of the year. Formative feedback and some indicative grades will be given in order to provide a good understanding of areas of strength and how to develop areas of weakness. All work will be submitted and eventually assessed against the following Achievement Standards.

Subject reference	Number	Title	Credits	Assessment
DVC 1.30	AS91063	Produce freehand sketches that communicate design ideas	3	External
DVC 1.31	AS91064	Produce instrumental multi-view orthographic drawings that communicate technical features of design ideas.	3	External
DVC 1.32	AS91065	Produce instrumental paraline drawings to communicate design ideas.	3	External
DVC 1.33	AS91066	Use rendering techniques to communicate form of design ideas.	3	Internal

### Resources required:

Inspirational PowerPoint  
Drawing resources such as examples of sectional, orthographic and isometric methods in relation to product design  
Camera – photography for ergonomics understanding and recording

### Learning activities: (instructions to students)

Process:

#### Conceptual exercises and freehand drawing

Produce a range of freehand drawings with accompanying inspiration images that explore the possibilities of the design brief and specifications.

*1 x A3 page minimum*

#### Establishment of character, meal, event, culture, and/or theme.

Clearly communicate through images, drawings and written descriptions/explanations the specific situation that you will be developing design ideas for.

*Part of an A3 page, could be the end of a concepts, or beginning of development*

#### Development of ideas and visual communication of design thinking and freehand drawing.

Use 2-D and 3-D freehand drawing techniques (orthographic, perspective, isometric, oblique, planometric) to explore, test, refine, compare and develop your design ideas. Consider page layout, narrative, and visual communication techniques to ensure clear and effective presentation. At this stage, material possibilities, components and ergonomics can be considered by showing research/investigations/case studies/influential designers/mock-ups/photography/Photoshop. Describe, explain and justify any significant design thinking or design discoveries so that your design process and decision making is clear. *Ensure you have a good range of detailed freehand drawings showing form, shape, function, proportion, construction details, structure, aesthetics, exploded, sectional and sequential views.*

*3 x A3 pages minimum*

#### Refinement freehand/instrumental drawing

Begin to refine dimensions and details using appropriate drawing methods. Use this as a sort of planning exercise for your instrumental drawings. Ask yourself, what don't you yet know about your design, and what will you still need to test, figure out and finalise before you do any presentation drawings.

*1 x A3 page minimum*

#### Orthographic instrumental drawing

Choose 1 item from your designed cutlery (minimum) and produce a minimum of 3 views including a sectional view on an orthographic drawing. Show projection lines between views, appropriate line work, titles, labels and dimensions to scale.

*1 x A3 page minimum*

#### Isometric/oblique (paraline) instrumental drawing

Use oblique, isometric or planometric instrumental drawing to show a minimum of 1 view of one or more of the pieces of cutlery. This can include an exploded drawing to show all components and how they fit together or sequential view of any moving parts/connections.

*1 x A3 page minimum*

#### Rendering/context

Using a copy/trace of either the previous paraline drawing, or a detailed freehand drawing, apply rendering techniques to convincingly communicate shape and surface qualities (materiality, colour, texture and finish, as well as highlights, reflections and shadows) of the cutlery design. The aim is to try and enhance the realistic representation of design qualities. This drawing can also consider the context of the design.

*1 x A3 page minimum*

#### Evaluation

A paragraph or two that describes explains and justifies your cutlery design and evaluates it in relation to the design brief and your specific situation.

*to be part of the final rendered presentation page*

--

Unit Title: <b>Designer postcard: Project 2</b>			<b>Graphics</b> Technology Faculty Wellington High School
Class: <b>GRA112 – Year 11 Graphics</b>	Duration: <b>6 weeks</b>	Curriculum level: <b>6</b>	

**Description of context:**

This activity requires you to develop design ideas of a postcard that has been informed by the work of an influential designer. You will present your ideas as a portfolio which will be assessed. You are given a design brief and the activity is divided into three tasks.

**Design Brief**

You are to design an innovative postcard. Your postcard is to accompany an exhibition that celebrates the work of twentieth century architects. The exhibition is being held at your city art gallery and is called “ Architects of 20<sup>th</sup> Century and beyond.” Architects included in the exhibition are *Frank Lloyd Wright, Mies Van der Rohe, Frank Gehry, Santiago Calatrava, Daniel Libeskind, Tadao Ando, Norman Foster, Antoni Gaudi, Zaha Hadid, Alvar Aalto, Charles and Ray Eames, Oscar Niemeyer, Le Corbusier, Herzog and de Meuron, Toyo Ito, OMA (Rem Koolhaas), Gerrit Rietveld.* You will choose one architect to inform your design ideas.

Your postcard must:

- Use typography and images to create an effective layout that is inspired by the design qualities of your selected architect.
- Be either 150mm x 210mm or 110mm x 170mm in size (post office approved sizes)
- Include, on the reverse side, space for an address, a postage stamp, and the name of the exhibition, as well as some concise information about your selected architect.

**Prior Learning:**

During the previous unit of work students are exposed to a range of designers in the “Designer of the Week” activity. At this time information is shared using PowerPoint/website of the various designers. Students complete a small sheet with the categories “who, where, when, what, why, and how.” A collection is stored in their workbooks so that when it comes time to choose which designer, they have already had their appetites whet.

**Key focus: Skills, knowledge, terminology:**

**Skills:**  
Research and analysis, freehand drawing, computer generated design (Photoshop), rendering, design language use.

**Knowledge:**  
Building and architecture features and functions, key characteristic of architects’ styles and buildings. Layout and presentation techniques and critique.

**Terminology:**  
Aesthetic and Functions principles including the derived elements: *Aesthetics:* movement, pattern and rhythm, proportion, balance, harmony and contrast, and style. *Function:* strength and stability, efficiency, reliability, fitness for purpose, user-friendliness, and ergonomic fit. *Layout:* contrast, repetition, alignment, proximity, focal point, hierarchy of information, eye path, positive/negative, text/image combinations, typography, image manipulation.

**Learning objectives:**

- Component 1: Visual Communication:**  
Students will demonstrate of and skills in fundamental visual communication techniques.
- Component 2: Graphics Practice:**  
Students will demonstrate ability to explore and develop design ideas by applying visual communication and design techniques in response to a brief
- Component 3: Knowledge of Design Practice:**  
Students will demonstrate understanding of design principles and processes, and the work of influential designers.

**Learning links:**

Key competencies:	Values:	Cross-curricular:
Thinking Using language, symbols and text Managing self Relating to others Participating and contributing	Excellence Innovation, inquiry and curiosity Diversity Equity Community and participation Ecological sustainability Integrity	English The Arts Health and PE Languages Mathematics Science Social sciences Technology

**Learning Outcomes:**

As linked to indicators – Students will:	As linked to key competencies/values/cross-curricular – Students will:
Indicators: (6.1) <ul style="list-style-type: none"> <li>• Create 2D and 3D freehand sketches that show in-depth design features in proportion relative to the context of the design brief to convey the intent of the design ideas.</li> <li>• Produce accurate instrumental 2d drawings that show in-depth information about technical features of a design</li> <li>• Produce accurate paraline drawings that show in-depth information about design features</li> </ul>	<ul style="list-style-type: none"> <li>• Relate to others by making an informed choice about designer to study in terms of how these designers have been important within the communities they have designed for.</li> <li>• Manage self by selecting preferred methods of design and image making and organising resources as needed</li> <li>• Manage themselves by planning and utilising checklists of milestones in required tasks</li> </ul>

<ul style="list-style-type: none"> <li>• Skilfully apply rendering techniques to convincingly communicate shape and surface qualities, enhancing the realistic representation of design qualities to an audience</li> <li>• Use rendering techniques to communicate the form of design ideas.</li> <li>• Skilfully plan, select and apply presentation skills that are of a high quality showing accurate layout skills, and visual impact to tell a story.</li> </ul> <p>Indicators: (6.2)</p> <ul style="list-style-type: none"> <li>• explore and refine design ideas by considering possible alternatives;</li> <li>• integrate principles of aesthetics and function, and design judgements, in a coherent and connected way to develop design ideas;</li> <li>• convincingly communicate design ideas visually in accordance with the context specified in the design brief.</li> </ul> <p>Indicators: (6.3)</p> <ul style="list-style-type: none"> <li>• select and research an influential designer</li> <li>• identify and explain the aesthetic and functional characteristics of their chosen influential designer</li> <li>• integrate aesthetic and functional characteristics of chosen influential designer when developing their own design ideas.</li> </ul>	<ul style="list-style-type: none"> <li>• Think about and justify decisions made about development direction and their inclusion of design principles as related to visual communication of their design ideas.</li> <li>• Use purposeful language, symbols and text to compliment any imagery as part of a media product.</li> <li>• Apply their understanding of conventional language symbol and text as used on a postcard to be user friendly and fit for purpose.</li> <li>• Contribute to others learning about chosen designer to others in class through process of collective research, designing, sharing information and finally displaying work in classroom.</li> <li>• Take up possibility of producing innovative design through choice of media, techniques and methods that challenge conventions</li> <li>• Make links with social sciences in terms of historical understanding and significance of designers within their countries of origin and design/art movements.</li> </ul>
---	--

### Assessment strategies and NCEA Standards:

This project will be informally formatively assessed by means of ongoing discussion and one to one teaching to individuals. Students supported with checklists which relate directly to assessment criteria. Final assessment occurs at the end of the project. This does not link to any other assessment or project.

Subject reference	Number	Title	Credits	Assessment
DVC 1.34	AS91067	Use the work of an influential designer to inform design ideas	3	Internal

### Resources required:

Power Points, websites, videos (YouTube and Click View) about designers  
 Books from classroom and school library about designers  
 Postcards as examples of layout possibilities and front/back considerations  
 Exemplars of image and text manipulation/experimentation

### Learning activities: (instructions to students)

#### Task One: Generate initial ideas

Select one of the Architects from above.

Show examples of the Architect's work, using detailed sketches and or photographs to illustrate the distinctive aesthetic and functional characteristics of the designers work to support your design features. Support the images with notes as you analyse the features. Consider both the distinctive aesthetic (factors related to appearance) and functional (factors related to use) features of each work.

Using the architects work, produce a variety of ideas for your postcard design. Communicate your ideas using design sketches (thumbnail techniques, collage and suitable media) and/or digital media. Use notes to explain how our ideas relate to the architect's work.

#### Task Two: Develop ideas

Explore and refine your initial ideas, further demonstrating how your postcard design has been effectively informed by the architect's work. (your own ideas should show how the distinctive aesthetic and functional elements that are characteristic of the selected designers work have been integrated effectively into your design work)

Experiment with different images and media and typographical style. Explore layout and composition through the use of negative space, visual elements (shape, texture, colour, line) and proportions inspired by the distinctive aesthetic and functional qualities of your architect.

Your refined ideas should be placed immediately after your initial ideas. This will be in the form of a series of visuals, design sketches, and digital media supported by notes and organised in a way that shows your thinking process.

#### Task 3: Develop final design.

Communicate your developed postcard design and present it as a portfolio.

Unit Title: <b>Rooftop Hideaway: Project 3</b>			<b>Graphics</b> Technology Faculty Wellington High School
Class: <b>GRA112 – Year 11 Graphics</b>	Duration: <b>16 weeks</b>	Curriculum level: <b>6</b>	

**Description of context:**

**Situation:**  
Half of the world's population lives in urban centres, in multiple units, with no land at all. In coming decades, almost all of population growth will occur in the cities. With people's changing lifestyles, and increasing density of our cities along with a higher awareness of the environment, it seems that now, proximity to work and leisure is becoming more preferable. City planners and architects have often looked at rooftops of existing buildings as possibilities for further inhabitation and activity. With unrestricted access to views and daylight, the rooftops of high rise buildings provide an abundance of potential sites. As a solution to the urban sprawl, communities of rooftop living units could start to populate the skyline of major cities.

**Design Brief:**  
Design a transportable rooftop living unit for one person or more to live and/or work in.

**Considerations:**  
This rooftop living unit can be thought of as a hideaway, an entertaining spot, a chill-out area, and inspirational area to work creatively, a designer's studio, a small dwelling, a space of contemplation, a retreat, a leisure zone, a sun worshippers paradise...the list could go on. It is important that you establish a theme/concept/name for your rooftop hideaway design so that it has some character or additional reason for being and could cater for the needs and wants of a specific sort of client. In addition, both natural and artificial lighting will need to be specifically designed for. Carefully considered lighting can make the building not only functional, but also an interesting addition to our city skyline at night.

**Specifications:**  
Space limitations: 48 square metres internal floor area, One storey, Maximum internal height 2.4m  
The space must include: A space to sleep, An area to sit, An area to prepare food, A small bathroom, Some storage, One entrance/exit (minimum)  
The following environmental factors must also be included : An intended orientation for sunlight considerations, Interior lighting layout

**Class description / history / prerequisites:**

This class comes from a range of experiences and backgrounds, as well as having extremes in their Graphics subject knowledge and experience. Prerequisites follow on from previous project where skills in freehand drawing, orthographic drawing and pictorial instrumental drawing can be built on. Experience in the design process, emphasising development of ideas is to be built upon.

**Key focus: Skills, knowledge, terminology:**

**Skills:**  
Research and analysis, freehand drawing, mock-ups, instrumental 2-D and 3-D drawing, rendering, design language use.

**Knowledge:**  
Building and architecture features and functions, materials, layout strategies, structures, sunlight versus daylight in buildings.

**Terminology:**  
Aesthetic and Functions principles including the derived elements: Aesthetics: movement, pattern and rhythm, proportion, balance, harmony and contrast, and style. Function: strength and stability, efficiency, reliability, fitness for purpose, user-friendliness, and ergonomic fit.  
Intended orientation for sunlight considerations, Interior lighting layout. (see specifications)

**Learning objectives:**

- Component 1: Visual Communication:**  
Students will demonstrate of and skills in fundamental visual communication techniques.
- Component 2: Graphics Practice:**  
Students will demonstrate ability to explore and develop design ideas by applying visual communication and design techniques in response to a brief
- Component 3: Knowledge of Design Practice:**  
Students will demonstrate understanding of design principles and processes, and the work of influential designers.

**Learning links:**

Key competencies:	Values:	Cross-curricular:
Thinking Using language, symbols and text Managing self Relating to others Participating and contributing	Excellence Innovation, inquiry and curiosity Diversity Equity Community and participation Ecological sustainability Integrity	English The Arts Health and PE Languages Mathematics Science Social sciences Technology

**Learning Outcomes:**

As linked to indicators – Students will:	As linked to key competencies/values/cross-curricular – Students will:
Indicators: (6.1) <ul style="list-style-type: none"> <li>Create 2D and 3D freehand sketches that show in-depth design features in proportion relative to the context of the design brief to convey the intent of the design ideas.</li> <li>Produce accurate instrumental 2d drawings that show in-depth information about technical features of a design</li> <li>Produce accurate paraline drawings that show in-depth</li> </ul>	<ul style="list-style-type: none"> <li>Use critical and reflective thinking to work through the design process purposefully</li> <li>Have opportunities to be creative within the design process with innovation, inquiry and curiosity encouraged and supported through provided resources and range of choices in the project brief.</li> </ul>

<p>information about design features</p> <ul style="list-style-type: none"> <li>• Skilfully apply rendering techniques to convincingly communicate shape and surface qualities, enhancing the realistic representation of design qualities to an audience</li> <li>• Use rendering techniques to communicate the form of design ideas.</li> <li>• Skilfully plan, select and apply presentation skills that are of a high quality showing accurate layout skills, and visual impact to tell a story.</li> </ul> <p>Indicators: (6.2)</p> <ul style="list-style-type: none"> <li>• explore and refine design ideas by considering possible alternatives;</li> <li>• integrate principles of aesthetics and function, and design judgements, in a coherent and connected way to develop design ideas;</li> <li>• convincingly communicate design ideas visually in accordance with the context specified in the design brief.</li> </ul> <p>Indicators: (6.3)</p> <ul style="list-style-type: none"> <li>• select and research an influential designer</li> <li>• identify and explain the aesthetic and functional characteristics of their chosen influential designer</li> <li>• integrate aesthetic and functional characteristics of chosen influential designer when developing their own design ideas.</li> </ul>	<ul style="list-style-type: none"> <li>• Explore the diverse needs/approaches to designing for a specific situation/character</li> <li>• Be exposed to, and have opportunity to learn more about examples of this sort of architecture in their immediate community as well as within an international context</li> <li>• Begin to apply ideas of sustainability by exploring building orientation and sunlight, materials/techniques, and the concept of efficiency.</li> <li>• Apply ideas of scale and measurement in terms of spatial requirements for designing a dwelling and all of its related constraints, therefore making links to mathematics</li> <li>• Make links with static images in English with shared terminology and in terms of communicating visually to an audience.</li> <li>• Begin to consider cities and make links to social sciences in terms of geography, population etc.</li> <li>• Participate in and contribute to a class exhibition by working towards a quality final presentation that clearly communicated the essence of their building design concepts and any related relevant visual information.</li> </ul>
--	--

### Assessment strategies and NCEA Standards:

Due to the length of this project, formative assessment is regular and requires students to be reflective and self assess their progress to date, identifying areas of strength, areas for development, missing aspects etc. This provides the basis for feedback and planning of time and individuals needs. Internal assessment is divided up so that development is assessed first, then promote and rendering is assessed at the end. External assessment is covered within the required stages of the project and is combined with relevant aspects of the first project to form the portfolio to be sent away in November.

Subject reference	Number	Title	Credits	Assessment
DVC 1.30	AS91063	Produce freehand sketches that communicate design ideas	3	External
DVC 1.31	AS91064	Produce instrumental multi-view orthographic drawings that communicate technical features of design ideas.	3	External
DVC 1.32	AS91065	Produce instrumental paraline drawings to communicate design ideas.	3	External
DVC 1.33	AS91066	Use rendering techniques to communicate form of design ideas.	3	Internal
DVC 1.35	AS 91068	Undertake development of design ideas through graphics practice	6	Internal
DVC 1.36	AS 91069	Promote an organised body of design work to an audience using visual communications techniques	4	Internal

### Resources required:

Inspirational PowerPoint  
 Range of books from classroom and school library about small dwellings, houses, portable architecture  
 YouTube videos about small dwellings  
 Various websites, and case studies as relevant  
 Exemplars of previous students work  
 Exemplars of freehand and instrumental drawing  
 Development design language handout  
 Various drawing convention examples and references

### Learning sequence: Instructions to students

#### Concept initiation

Show inspiration from a range of sources, e.g.

- Other buildings
- Conceptual models (based on architect style, animal/insect/lighting effects etc)
- Images
- Etc

Draw initial design ideas in freehand with inspiration clearly linked.

Drawings can be of details, interior spaces or exterior forms.

Explain design ideas.

1 - 2 A3 pages

Inspiration images and drawings

Annotation

#### Conceptual exploration

For each of the 3 concepts include aspects of the following:

- Annotation explaining design concepts
- Labels communicating what spaces are shown in the drawings
- Plans, sections, elevations+ 3-D isometric/perspective (freehand)
- Additional inspirational images

Consider how the combination of drawings and annotation helps to tell the story of your design ideas.



Use a range of drawing media to help communicate materials, context, features etc.

Start to address the specification of the brief.

2+ pages

Plans, sections, elevations + 3-D

3 different concepts minimum

Annotation and labels

#### **Idea development and refinement**

Evaluate your concepts against the specifications. Identify aspects that would benefit from development as well as why other ideas would not be suitable.

Use the provided sheet to continually evaluate and make design judgements about your development in terms of:

- The specifications and considerations of the brief
- Aesthetic and functional principles and elements

Explore and refine ideas by considering alternatives, integrating principles and judgements in a coherent and connected way to develop design ideas. Key aspects to develop:

- Layout and space limitations
- The actual space in the specifications
- Sunlight and daylight (including orientation to north)
- Interior lighting layout
- Provision of suitable shelter
- Sustainable or eco-friendly features.
- Materials
- Keep striving for innovation throughout the development process.

Convincingly communicate design ideas visually

- Use a range of freehand drawing methods and drawing media effectively and with care
- Make mock-ups where useful to explore lighting, layout, detail etc

Use a page layout that is clear and effectively communicates thinking and process.

4+ pages

2-D and 3-D freehand drawings

Mock-up photographed

Annotation and labels

#### **Orthographic**

Use orthographic drawing conventions to produce an accurate and scaled drawing communicating the interior and exterior features of your building.

You may include an overlay which indicates clearly the intended lighting design layout of the interior.

The intended orientation of the building must be clearly indicated.

1 page

Floor plan and 2 – 3 elevations, of which at least one view is a section.

#### **Planometric**

Planometric drawing of an aspect of the interior design. Include all construction lines and line-in appropriately. This can be a cut-away or sectional drawing which communicates clearly a key aspect of your building concept. This could include an area in which you have resolved the lighting design so that the effects of light are able to be rendered later.

*You can choose to add an isometric/oblique view of the exterior which in combination with the planometric clearly communicates overall design ideas and “tells the story”.*

1 page

Choose part of the interior that is most interesting to show.

#### **Rendering**

Photocopy/redraw/trace the 3-D planometric/isometric onto suitable paper

Choose clear light source if demonstrating daylight

Think through light sources (multiple) if showing artificial light at night.

Apply rendering techniques in media of your choice to convincingly communicate shape and surface qualities, enhancing the realistic representation of design qualities of your building concept.

1 A3 page

3-D instrumental copied and rendered

#### **Presentation**

Plan out a possible page or collection of pages that effectively communicates your design ideas to an audience. Think about initial inspiration, ideas you trailed, developed ideas and the final design, as well as the context and situation of the original design brief.

Purposefully select and apply techniques to ensure layout, composition and visual impact is appropriate to the audience. The goal is a high quality presentation that is convincing, shows accuracy of layout, and has visual impact and precise execution of techniques.

It could be based on a narrative, it could include a model, use photography, drawing, reproductions of drawings, etc. Be creative.

Planning pages + Final presentation page(s) as part of class exhibition