

# GRD10: Industrial Design – Multi Tool

**Achievement Standard:** By the end of Year 10, students explain how people working in design and technologies occupations consider factors that impact on design decisions and the technologies used to produce products, services and environments. They identify the changes necessary to designed solutions to realise preferred futures they have described. When producing designed solutions for identified needs or opportunities, students evaluate the features of technologies and their appropriateness for purpose for one or more of the technologies contexts.

Students create designed solutions for one or more of the technologies contexts based on a critical evaluation of needs or opportunities. They establish detailed criteria for success, including sustainability considerations, and use these to evaluate their ideas and designed solutions and processes. They create and connect design ideas and processes of increasing complexity and justify decisions. Students communicate and document projects, including marketing for a range of audiences. They independently and collaboratively apply sequenced production and management plans when producing designed solutions, making adjustments to plans when necessary. They select and use appropriate technologies skilfully and safely to produce high-quality designed solutions suitable for the intended purpose.

In Year 9 and 10 students use design and technologies knowledge and understanding, processes and production skills and design thinking to produce designed solutions to identified needs or opportunities of relevance to individuals and regional and global communities. Students work independently and collaboratively. Problem-solving activities acknowledge the complexities of contemporary life and make connections to related specialised occupations and further study. Increasingly, study has a global perspective, with opportunities to understand the complex interdependencies involved in the development of technologies and enterprises. Students specifically focus on preferred futures, taking into account ethics; legal issues; social values; economic, environmental and social sustainability factors and using strategies such as life cycle thinking. Students use creativity, innovation and enterprise skills with increasing confidence, independence and collaboration. Using a range of technologies including a variety of graphical representation techniques to communicate, students generate and represent original ideas and production plans in two and three-dimensional representations using a range of technical drawings including perspective, scale, orthogonal and production drawings with sectional and exploded views. They produce rendered, illustrated views for marketing and use graphic visualisation software to produce dynamic views of virtual products.

Industrial design is the professional service of creating and developing concepts and specifications that optimise the function, value and appearance of products and systems for the mutual benefit of both user and manufacturer. Industrial design uses a combination of applied art and applied science to improve the aesthetics, utility and usability of a product, which also may improve the product's marketability and production.

## Assessment:

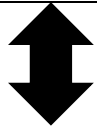
- 8 weeks class time and independent student time
  - **Design Brief** – 300 words (including **Design Criteria**)
  - **Evaluation/Appraisal** - 200 words
  - **Annotated preliminary sketches and drawings**
- Graphical representations (CAD) software** to produce design solution



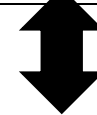
## Standard Elaborations - Proficiency Scale

	Knowledge and Understanding	Process and Production Skills Evaluating
3	evaluation of the features of technologies and their appropriateness for purpose for one or more of the technologies contexts when producing designed solutions for identified needs or opportunities	Use of detailed criteria for success to make an evaluation of: <ul style="list-style-type: none"> <li>- their ideas</li> <li>- designed solutions</li> <li>- processes</li> </ul>
2	<p><i>Recognise or recall technical vocabulary:</i> Cognitive Verbs Sketch – execute a drawing or painting in simple form Appraise – evaluate the worth, significance or state of something Critique – review in a detailed, analytical and critical way Create – produce or evolve from one's own thought or imagination Design – produce a plan, simulation, model or similar</p> <p><i>Recognise or recall technical information:</i> You have been chosen to create an infographic for an environmental or scientific issue that will make an impact on whichever issue you choose. To be put online. Your audience is teenagers across the world. In terms of your relationship with your audience:</p> <ul style="list-style-type: none"> <li>• <b>Distance:</b> Different countries with different languages and cultures.</li> <li>• <b>Power:</b> They have the power to accept or reject your infographic. Make it attractive and effective.</li> </ul> <p><b>Values:</b> Environmentally conscious.</p> <p><i>Perform basic process such as:</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use a Design Folio and process</li> <li><input type="checkbox"/> Use CAD and drawing processes</li> </ul>	<p><i>Recognise or recall vocabulary:</i> Explain, evaluate, evaluative language, designed solutions, processes, judge, criteria, functionality, aesthetics, design, sustainability [add more if needed]</p> <p><i>Perform basic process such as:</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> identify features of an Infographic which match design criteria</li> <li><input type="checkbox"/> explain the degree of success of the final product in terms of the criteria and finishing</li> <li><input type="checkbox"/> explain future improvements to your process and final product</li> <li><input type="checkbox"/> communicate ideas in complete sentences and/or appropriate graphical representations</li> </ul>

<p>READING / VIEWING/ LISTENING: Core Text 1: Environmental Infographic design "Design Folio's" online clips showing processes.</p>
<p>COMPREHENSION SKILL FOCUS: Design processes, elements and principles</p>



<p>THINKING: Sequence, sketch, draw, explain and evaluate</p>
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<p>WRITTEN / SPOKEN / MULTI-MODAL TEXTS Power point and use of Scaffolded evaluation</p>
<p>HIGHLY VALUED LANGUAGE FEATURE FOCUS: Evaluative Language</p>

### Design Folio includes:

**Investigation:** Examine existing products similar to the requirements for this design problem. Consider the specific requirements of the brief in terms of the user requirements. Consider visual components in elements of design relating to infographics such as colour, form, shape, line, space, texture, tone, etc.

Consider application, arrangement and manipulation of principles of design relating to infographics such as alignment, balance, contrast, harmony, hierarchy, proximity, repetition, scale, etc.

**Research and evaluate existing designs of logos.** Produce sketches/pictures supported by notes describing the products tools in terms of their meeting/ not meeting the user requirements

**Design Brief (100 words):** An explanation of the design problem. The should include- The identified needs of the particular audience  
The design criteria upon which the design will be judged.

Note: the criteria should be used to justify and evaluate your final design.

**Development of original concepts and designs.** Present at least 3 possible sketches of your own design solution. Support these sketches by notes that describe and evaluate your design ideas and decisions. Justify your design decisions with annotations

**Present final concept and design.** Present final sketch/sketches of your chosen design showing evidence of refinement from task 3 above. Justify your decisions. Produce graphical products.

Manage the production of the graphical representations. Use project/time management (write a checklist of what you have to achieve each week to meet your deadlines) to complete all tasks  
produce a digital infographic

**Evaluation (300 words).** Evaluate your final infographic design. Justify your design ideas. Highlight strengths of your design and suggest changes that would address any perceived weaknesses of the design.