

PRODUCT DESIGN AND TECHNOLOGY

Unit 3 and 4

Design plays an important part in our daily lives. It determines the form and function of the products we use and wear. Designing transforms ideas into drawings and plans for the creation and manufacture of useful products. Designer-makers use processes to develop products that fulfil human needs and wants. The combination of design and technical skills is vital if we are to create and use sustainable products, and add value to these products through commerce. In Design and Technology students assume the role of a designer-maker and develop knowledge and skills to produce effective and creative responses to design challenges.

UNIT 3

UNIT 3: APPLYING THE PRODUCT DESIGN PROCESS

In this unit students are engaged in the design and development of a product that meets the needs and expectations of a client and/or an end-user, developed through a design process and influenced by a range of complex factors. These factors include the purpose, function and context of the product; human-centred design factors; innovation and creativity; visual, tactile and aesthetic factors; sustainability concerns; economic limitations; legal responsibilities; material characteristics and properties; and technology. Design and product development and manufacture occur in a range of settings. An industrial setting provides a marked contrast to that of a 'one-off situation' in a small 'cottage' industry or a school setting. Although a product design process may differ in complexity or order, it is central to all of these situations regardless of the scale or context. This unit examines different settings and takes students through the Product design process as they design for others. In the initial stage of the Product design process, a design brief is prepared. It outlines the context or situation around the design problem and describes the needs and requirements in the form of constraints or considerations.

Learning Activities

- Students consult with a client to design and develop a one off product/s that meets the client's needs.
- Students develop a manufacturing plan for one or a series of products of their choosing.
- A folio of the chosen product(s) is developed to assist in the formulation of ideas. The folio must demonstrate the student's creativity, thoughts and explanations on design options, properties of materials, and their exploration of joining processes, cutting, shaping and finishing of materials.

Key skills required

- Practical – working with hand and power tools
- Folio
 - Drawing – acceptable conventions are used to produce working drawings.
 - Possibly Computer Aided Drawing (CAD) – design programs such as Google Sketch-Up, CorelDRAW and Inventor

UNIT 4

UNIT 4: PRODUCT DEVELOPMENT AND EVALUATION

In this unit students learn that evaluations are made at various points of product design, development and production. In the role of designer, students judge the suitability and viability of design ideas and options referring to the design brief and evaluation criteria in collaboration with a client and/or an end-user. Comparisons between similar products help to judge the success of a product in relation to a range of Product design factors. The environmental, economic and social impact of products throughout their life cycle can be analysed and evaluated with reference to the Product design factors.

Learning Activities

- Students produce one or a series of products of their choosing, such as the construction of a coffee table, bed or cabinet.
- A folio of the chosen product(s) is developed to assist in the formulation of ideas. The folio must demonstrate the student's creativity, thoughts and explanations on design options, properties of materials, and their exploration of joining processes, cutting, shaping and finishing of materials.

Key skills required

- Practical – working with hand and power tools
- Folio
 - Drawing – acceptable conventions are used to produce working drawings.
 - Possibly Computer Aided Drawing (CAD) – design programs such as Google Sketch-Up, CorelDRAW and Inventor

VCAA ASSESSMENT –

In Design and Technology the student's level of achievement will be determined by:

- Unit 3 school-assessed coursework: 12 per cent
- Unit 4 school-assessed coursework: 8 per cent
- School-assessed task: 50 per cent to the study score
- End-of-year examination: 30 per cent to the study score