

PRODUCT DESIGN AND TECHNOLOGY

Unit 1 and 2

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 1: PRODUCT RE-DESIGN AND SUSTAINABILITY

This unit focuses on the analysis, modification and improvement of a product design with consideration of the materials used and issues of sustainability. Finite resources and the proliferation of waste require sustainable product design thinking. Many products in use today have been redesigned to suit the changing needs and demands of users but with little consideration of their sustainability. Knowledge of material use and suitability for particular products is essential in product design. Additionally, knowledge of the source, origin and processing of materials is central to sustainable practices. Students consider the use of materials from a sustainable viewpoint. Sustainable practices claimed to be used by designers are examined.

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

- 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

Assessed tasks

Folio – Investigating a variety of products, designing/re-designing a product/s, completing working drawings, a journal describing practical work and safety requirements and a product evaluation.

Practical Work – Testing materials and processes, proto-types and final productions.

UNIT 2

UNIT 2: COLLABORATIVE DESIGN

In this unit students may work in teams to design and develop an item in a product range or contribute to the design, planning and production of a group product. They focus on factors including: human needs and wants; function, purpose and context for product design; aesthetics; materials and sustainability; and the impact of these factors on a design solution. Teamwork encourages communication between students and mirrors professional design practice where designers often work within a multi-disciplinary team to develop solutions to design problems. Students also examine the use of ICT to facilitate teams that work collaboratively but are spread across the globe. In this unit students are able to gain inspiration from an historical and/or a cultural design movement or style and its defining factors such as ideological or technological change, philosophy or aesthetics.

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

Assessed tasks

Folio – Investigating a variety of products, designing/re-designing a product/s, completing working drawings, a journal describing practical work and safety requirements and a product evaluation.

Practical Work – Testing materials and processes, proto-types and final productions.