

Unit 1 – Lesson 2

The Technological Design Process



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1. Define Problem or Challenge

The Design Brief

- **identify and recognize** the problem or challenge and begin keeping a record of the design process
- use a design brief to outline the broad aims of the project and describe in a general **way what needs to be done** to achieve those aims
- as work progresses on the project, you may periodically **revise** the initial broad plan to reflect what is actually happening

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2. Conduct Research Developing a Framework

- **research** and **analysis** into the topic
- a good way to do this is to **specify the requirements** of the problem
- identify various **possible solutions** and the **resources** required to achieve them; they determine whether the various resources are available
- during this stage you may discover that you need to **redefine** the problem or challenge

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3. Generate Ideas

Concepts for Potential Solutions

- **identify** various ways in which the possible **solutions** could be achieved
- solutions should be **realistic** and **satisfy** the design brief
- **evaluate** each of these alternatives in terms of quality, cost, durability, expectations, etc.
- as at any other stage in the process, you may need to **redefine** what you want to accomplish

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4. Choosing the Best Solution Evaluating

- Consider such factors as what materials, tools, and resources are available, the amount of time needed to carry out different procedures, and any relevant **ergonomic** and **aesthetic** requirements
- if necessary, **construct and evaluate a model**
- based on the results of these activities, **choose the solution that seems best**
- record the reasons for choosing a particular solution in the design brief

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5. Build a Prototype or Model Implementing a Plan

- realisation of a solution in the form of a **formal model prototype, artefact or system**
- your design will be **implemented from the drawings** created in the **Planning Stage**
- for physical products, make a **full-sized prototype** using production-type materials, tools, and equipment

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6. Test and Evaluate Solution

Does it work?

- **test your product** or prototype to see if it works and how well it works
- as with every step you **may need to modify the original conception** of the product to reflect issues that emerge during the testing phase

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7. Reflect and Report

Reflecting on the Process and the Product

- **evaluate the process** used and the end result in light of the expectations and the reactions of peers and the client
- as a result of the evaluation, you **may decide to modify the production process, the product, or even the original definition** of the problem or challenge
- also at this stage **complete the design brief or technological report** and communicate the results
- **how does your product meet the requirements of the brief?**
- **how can the design be improved?**

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Lesson 2 Task

- logon to your computer
 - login: Your Student Number
 - Password: should be your postal code: l4m3l8
- Open up Internet Explorer
 - browse to <http://www.jcarron.com/>
 - look for this class – TDJ3M
 - download today's lesson in PDF Format
 - save this file to your network folder on the H: drive
 - REMEMBER! Any files not saved to this folder daily will be erased!!!!
 - Take the Computer Skills test -
 - After you lesson has been saved use the internet and a search engine such as www.google.ca to investigate the design process engineers have used for common everyday inventions, etc. (not for hand in)