

Discovery College [Technology Web Site:](https://sites.google.com/a/dc.edu.hk/technology/)

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**Significant Concept:**

*Good design is a balance of aesthetics and functionality*

**Area of Interaction:** Human Ingenuity.

*Problem solving often requires creative thinking.*

***ATL****: Thinking*: Creativity, originality and inspiration.

Information Literacy: Web Based ePortfolios.

**Unit Question:**

*How can I design solutions that look good and work well?*

**Context.**

“Design is not just what it looks like and feels like. Design is how it works” Steve Jobs.

Being able to combine form and function is the aim of all designers. In this design challenge, your task will be to do just that. Students will explore the relationship between form and aesthetics balanced against function and practicality.

Students will explore the systems involved in the design and manufacture of loud speakers. The nature of sound and acoustics will also be examined.

**Task:**

There is a need for a new range of travel speakers aimed at the youth market. The speakers must be small and yet produce good quality sound. You will identify a demographic and design accordingly.

**Attitude: Level: 6**

**Plan: Level: 6**

**Design: Level: 6**

### **Assessment**

**Create: Level: 6**

**Evaluate: Level: 6**

**Investigate: Level: 6**

Year 9: Pump up the Volume [Systems] [Materials]

MYP Technology

Year 9: Travel Speakers [Systems] [Materials]

You will follow the Design Cycle to complete this task. I have created a checklist for you to follow for each stage of the Design Cycle complete with due dates. I will assess each section independently and then the whole Design Folio will be submitted for final assessment.

Remember to use your Google Site during this unit!

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|  | **Assessment Criteria: A - Investigate** | |
| **5-6** | You have created a design brief. You have explained the problem and **explained** its **relevance**. You have investigated the problem, **analysing** information from a **broad range** of **appropriate**, **acknowledged** sources. You have **listed** a **range** of methods for testing to evaluate the product against the design specifications. |  |
| **3-4** | You have **stated** the problem in the form of a **design brief**. You have investigated the problem, analysing information from some **appropriate**, **acknowledged** sources. You have **listed** some methods for **testing** the product against the design specifications. |  |
| **1-2** | You have **investigated** the problem, **collecting** information from sources. You have listed a limited range of specifications. |  |

**Investigate**

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| **Investigate: [Due: ]**  **Identify the Problem. (Research)**   * Write some **guiding questions** to help with your research * Explain the **AOI.** * Create a **Mindmap** * Write a Design Brief explaining **what** you will design, **why** it should be made **whom** it is for.   **Develop the Design Brief**   * Complete a **product analysis** into similar products. * Describe the design terms of Form & Function * Complete research into how speakers work and acoustics. * Complete research in appropriate **materials & construction techniques**.   **Formulate a Design Specification**   * Write a **detailed** Design Specification * Describe how you will **test** you final product | **Investigate- Tips for Success**  [www.myp-tech.wikispaces.com](http://www.myp-tech.wikispaces.com) |

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|  | **Assessment Criteria: B- Design** | |
| **5-6** | You have generated a **range** of **feasible** designs, **each** **compared** against the design specification. You have given **objective** **reasons** for your choice of final design, and **evaluated** it fully against the design specification. |  |
| **3-4** | You have generated a **few** designs, selecting **one** and **comparing** and **evaluating** it against the design specification. |  |
| **1-2** | You have generated **one** design, and made some attempt to **evaluate** it against the design specification |  |

**Design**

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| **Design**: **[Due: Oct 8th**]  **Design a product or Solution**   * Write some **guiding questions** to help with your designing * Sketch **several, feasible** designs for your speakers and annotate thoroughly. * Evaluate **each** design against the Design Specification. * Justify your chosen design. | **Design- Tips for Success** |

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|  | **Assessment Criteria: C - Plan** | |
| **5-6** | You have **competently** used **appropriate** techniques and equipment. You have followed the plan and **explained** any modifications made, resulting in a product/solution of **appropriate** quality. |  |
| **3-4** | You have used **appropriate** techniques and equipment. You have followed the plan and **mentioned** any modifications made, resulting in a product/solution of **good** quality. |  |
| **1-2** | You have created at least **part** of the **planned** product/solution. |  |

**Plan**

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| **Plan: [Due: Oct 15th ]**  **Plan a Product or Solution**   * Write some **guiding questions** to help with your planning * Present your final design. * Write a **detailed** materials list * Write a **detailed** Production Plan for how you will make your speakers. * Evaluate your plan (during the Create phase) and explain any changes. | **Plan- Tips for Success** |

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|  | **Assessment Criteria: D - Create** | |
| **5-6** | You have **competently** used **appropriate** techniques and equipment. You have followed the plan, resulting in a product/solution of **appropriate** quality. |  |
| **3-4** | You have used **appropriate** techniques and equipment. You have considered the plan resulting in a product/solution of **good** quality. |  |
| **1-2** | You have created at least **part** of a product/solution |  |

**Create**

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| **Create: [Due: 19 Nov]**  **Create the Product or Solution**   * Create a pair of speakers to the best of your ability.   **Use Appropriate Techniques and Equipment**   * Keep a **detailed** Process Journal each lesson.   **Follow the Plan**   * Follow your production plan a explain **any** changes | **Create- Tips for Success** |

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|  | **Assessment Criteria: E - Evaluate** | |
| **5-6** | You have **objectively considered** the success of the product/solution based on the **results of testing** and **your own views**. You have provided an evaluation of your own performance at **each** **stage** of the design cycle and suggested **improvements**. You have provided an evaluation of the impact of the product/solution on individuals, our community and/or the environment. |  |
| **3-4** | You have **objectively considered** the success of the product/solution **and** your own performance and suggest ways in which these could be improved. You have **compared** the final product/solution against the design specification. |  |
| **1-2** | You have **objectively** **considered** the success of the product/solution **or** your own performance. |  |

**Evaluate**

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| **Evaluate: [Due: 26th Nov ]**  **Evaluate your Product or Solution**   * Test your speakers * Evaluate your completed project against the Design Specification. * Suggest improvements to your final product   **Evaluate your Use of the Design Cycle.**   * Evaluate your use of the Design Cycle. * Evaluate the **AOI** and your understanding of the ‘Big Picture’. * Evaluate your personal engagement in the project. (effort and attitude.) | **Evaluate- Tips for Success** |

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|  | **Assessment Criteria: F - Attitude** | |
| 5-6 | You have **consistently** displayed a satisfactory standard in personal engagement (motivation, independence, general positive attitude) **and** attitudes towards safety, cooperation and respect for others. |  |
| **3-4** | You have **frequently** displayed a satisfactory standard in personal engagement (motivation, independence, general positive attitude) **and** attitudes towards safety, cooperation and respect for others. |  |
| **1-2** | You have **occasionally** displayed a satisfactory standard in personal engagement (motivation, independence, general positive attitude) **or** attitudes towards safety, cooperation and respect for others. |  |

**Attitude**