Faculty – iSTEM	**Stage 5 – Year 10 iSTEM**	**Topic: Individual Task**

Task Description:

This task is an individual task. You are to use your knowledge of STEM (Science Technology, Engineering and Maths) and Design Principle to create an individual task in an area of your interest.

You can choose an area of your own interest but it must have some links to the STEM concepts. The more links and the greater the depth of knowledge of those areas will translate into better grades. For example a grade A means that you have an **exceptional** understanding of the subject material and the processes involved.

You will have to show how you arrived at the end point of your project and will need to include a folio of all the work that you have done to achieve the final outcome. This should be under the headings listed below and based on the Design Principles

You will need to present your final project to an audience at the completion of the project.

Date Given: Week 3 Term 1	**Date of Completion:** Week 3 Term 2

Outcomes to be Assessed:
5.1.1 develops ideas and explores solutions to technological and engineering based problems
Technology Course outcomes
5.1.1,5.2.1, 5.2.2
5.5.1, 5.5.2, 5.7.1, 5.8.1

Task Guidelines:

You will be expected to:
- **Complete and individual STEM task, Research, Design and Build something or as negotiated**
- **Submit a design folio and present your project to an audience**

Penalties:
    Failure to complete the task with a sustained and diligent effort or because you are absent may lead to:
- **A zero mark**
- **The issuing of a warning letter explaining that you have not met the course learning outcomes according to the requirements of the NSW Board of Studies**

Please note: that plagiarism, the using of the work of others without acknowledgement, will incur serious penalties and may result in zero award. Any cheating will also incur penalties.

Faculty: Science/TAS	**Subject**: *iSTEM – Science, Technology, Engineering & Mathematics*	**Topic**: Individual Project
Teacher: Shea	**Student**:	

Outcomes/Content Assessed:

 5.1.1,5.2.1, 5.2.1, 5.2.2

5.5.1, 5.5.2, 5.7.1, 5.8.1

Weighting(s): 20%

Date Given: 13th February (T1, Wk3)	**Date of Completion:** Friday 17th May (T2, Wk3)

Description of task

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You can choose an area of your own interest but it must have some links to the STEM concepts. The more links and the greater the depth of knowledge of those areas will translate into better grades. For example a grade A means that you have an **exceptional** understanding of the subject material and the processes involved.

You will have to show how you arrived at the end point of your project and will need to include a folio of all the work that you have done to achieve the final outcome. This should be under the headings listed below and based on the Design Principles

You will need to present your final project to an audience at the completion of the project.

Task Guidelines: (steps/marking scale/grid)

Project Outline and Design Principles

You are to research and design/build/create something of your own choice. It can be anything, a game component, a business venture, programmable device, a combination of all the areas of STEM. You will need to demonstrate and document your understanding of the Engineering Design Loop in the evolution of your product. The completion of a **Folio** will be required. In this Folio, you will complete the following areas:

1. Cover page, contents page
2. Introduction/Statement of Intent, what you are planning to do (Identify a Need)
3. Research of ideas, any ideas that allowed you to develop you project
4. Development of ideas (Develop Possible Solutions)
5. Progress in the task, any testing you completed a diorama of the projects development (Prototype)
6. Project conclusion or evaluation of you task. Any future developments that may grow from this task.
7. You will need to present your project to an audience as part of this assessment. (Communicate the Design)

Assessment Expectations

It is expected that this research report should be a substantial document that will showcase your skills researching and using Information and Communication Technologies to compile a serious report on the topics highlighted.

An expected length for a report that can gain maximum marks would be required to be **no less than 5 pages** in length and display the use of **images/diagrams** taken from the internet to complement your work. Remember that **Plagiarism** is not accepted

Assessment Format and Submission

You will use **Microsoft Word or like** to present your assessment. You will be required to present this assessment on paper as well as USB/Email

Marking Criteria   Folio   Student:

Component	Criteria	Marks
Cover Page & Table of Contents	• Students complete a cover page with Design Image and add an automated Table of Contents page that displays all sections of Design Folio. Each should be on a separate page. • Students have a cover page, with or without the design image, displays a basic Table of contents. On separate pages. • Students do not display a cover page or a Table of contents and/ or are not on separate pages. • Not attempted	3 2 1 0
Introduction/ Statement of intent	• A student demonstrates an exceptional understanding of **what, why, how and when** of their Project • A student demonstrates a comprehensive explanation of **what, why, how and when** of their Project • A student demonstrates a sound level of explanation of what, why, how and when of their project. • Students displays a basic level of understanding for what, why, how and when for the Design Project. • Not Attempted	5 4 2-3 1 0
Research of ideas	• Student documents and collates exceptional level of research that displays many designs and options for their idea. The ideas are annotated with individual thought about each idea. • Student documents and collates excellent level of research that displays many designs and options for their idea. The ideas are annotated with individual thought about each idea. • Student documents and collates sound level of research that displays many designs and options for their idea. Limited annotation of ideas • Student displays limited to basic levels of research and understanding of Project. Basic comments about their research ideas • Not attempted	5 4 2-3 1 0
Development of Ideas	• A student complies and presents an exceptional collage of ideas with annotations highlighting positive and negative aspects of the chosen designs. Errors or problems are highlighted and solutions are clearly articulated. • A student complies and presents a high level collage of ideas with annotations highlighting positive and negative aspects of the chosen designs. Errors or problems are highlighted and solutions are clearly articulated. • A student complies and presents a collage of ideas with some annotations highlighting positive and negative aspects of the chosen designs. Some errors or problems are highlighted and solutions are clearly articulated. • A student compiles a series of design ideas and presents them with some positive and negative impacts. Errors or problems are identified. • A student presents 1 design with limited or no annotations • Not attempted	5 4 2-3 1 0
Progression of Ideas, testing Evaluating	• Students will identify or show preliminary designs or trials to an exceptional standard • Students will identify or show preliminary designs or trials to an sound standard • Students will identify or show preliminary designs or trials to basic standard • Not Attempted	4-5 2-3 1 0
Project Conclusion	• Students are required to produce an exceptional conclusion that highlights and discusses the process of their Project and the negative and positive impacts they observed during the process.	5

	• Students are required to produce a high level conclusion that highlights and discusses the process of their Project and the negative and positive impacts they observed during the process. Some aspects of the project are not identified or evaluated	4
	• Students are required to produce a sound conclusion that highlights and discusses the process of their Project and the negative and/or positive impacts they observed during the process.	2-3
	• Students will demonstrate a basic conclusion that highlights some areas of the positive or negative impacts of the design process and displays sound levels of Literacy structure and knowledge.	1
	• Not Attempted	0
Presentation		
	• Project is presented and articulated to an exceptional standard. Student has a clear knowledge of all the components of the task that they complete. They have an exceptional understanding of how they solved any issues that arose from the task. They present themselves confidently.	9-10
	• Project is presented and articulated to a high standard. Student has a clear knowledge of all the components of the task that they complete. They have high understanding of how they solved any issues that arose from the task. They present themselves confidently.	7-8
	• Project is presented and articulated to sound standard. Student has a knowledge of all the components of the task that they complete. They have an understanding of how they solved any issues that arose from the task. They present themselves soundly.	5-6
	• Project is presented and articulated to a basic standard. Student has a basic knowledge of all the components of the task that they complete. They have a basic understanding of how they solved any issues that arose from the task. They have difficulty present themselves confidently.	3-4
	• Students struggle to present their project in a coherent manner and have a limited understanding of how they completed their project	0-2

Notes: **Mark:**

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