

The Sustainability Challenge Overview

Presentation Brief:

A scientific presentation should be engaging and informative. It should clearly show the viewers the problem that is affecting people in the Orange area, and how it is being solved.

Portfolio Brief:

The Scientific Research Portfolio supports and guides the development of the Scientific Research. It provides a record of the processes and documents the information gathered and the development of the presentation.

The portfolio is an active, working, purpose-built set of documents that facilitates organisation and ensures that students reflect on their work and maintain information and records of their actions and findings. It is used to evidence students' original work and maintain records of teacher feedback, comments and observations. The portfolio may be maintained in digital format.

The following information provides the key structural elements of the portfolio. Each element may be revisited a number of times and the order of engagement with each element may vary.

Section 1 Planning and Portfolio

Use the portfolio booklet to complete the following sections:

- an action plan with milestones and a timeframe for each stage of the Sustainability Challenge
- a diary or list of the sequential development of the idea
- a summary of how you used the Design Thinking Process. This should be the history of the development of an idea, including
 - Empathy profile
 - Define
 - Ideate (generating your ideas, modifying and selecting 1)
 - Prototype (producing a detailed model of your selected solution)
 - Test (collecting feedback, refining and modifying your idea)
- a list of the references or websites that you visited.
- a review or summary of the material you research that is appropriate to your scientific research question
- a concept map or alternative strategy for generating ideas.
- a define, refined and justified scientific research question concept or idea.

Section 2 Creating the presentation

Once your storyboard has been signed off, you may then commence creating your visual presentation. In your presentation, you will need to include:

- the problem you are addressing
- who the problem affects
- what your solution to the problem is (include a model of your solution)
- how your solution will fix the problem
- The scientific evidence that supports your solution

Section 3 Reflection of the Process

Reflections of the process may include:

- extracts of students' drafts with reasons for changes and critical questions from peers and/or teachers
- revisions of the scientific research or ideas with justifying statements
- examples of final edits, including use of scientific language
- suggestions for improvements to the Sustainability challenge including an evaluation of the collaboration within the group

Scientific Portfolio

Extensive understanding of

thorough knowledge of

Sound knowledge of

Basic knowledge of

Elementary knowledge of

A

B

C

D

E

Section 1 Planning	Portfolio is comprehensive, detailing stages in project development	portfolio is completed, detailed account of the progression of the activity, shows a comprehensive list of stages of development, the stages are cohesive, may include an action plan, a diary, a storyboard, idea development, design thinking stages, refined research question, research that has been completed on the problem	folio is present, detailed account of the progression of the activity, shows a thorough list of stages of development, the stages are mostly cohesive, may include an action plan, a diary, a storyboard, idea development, design thinking stages, refined research question, research that has been completed on the problem	folio is present, a brief account of the progression of the activity, shows a list of stages of development, the stages are mentioned, some of the following are included in brief detail an action plan, a diary, a storyboard, idea development, design thinking stages, refined research question, research that has been completed on the problem	folio is present, a brief account of the progression of the activity, shows a list of some stages of development, some of the following are included in little detail, an action plan, a diary, a storyboard, idea development, design thinking stages, refined research question, research that has been completed on the problem	folio is present, some account of the progress of the activity, some stages of development are shown, doesn't flow or is hard to understand	
		10-9	8-7	6-5	4-3	2-1	0
Section 3 Evaluation	Reflection of their investigation is shown to improve the task	shows an exceptional understanding of scientific concept and have used evidence to improve their investigation, evidence or examples of errors are highlighted and improved, evidence that ideas have been revised, examples of edits an evaluation of the task that you have completed including the way you worked with other students	shows a thorough understanding of scientific concept and have shown some evidence to improve their investigation, evidence or examples of errors are highlighted and improved, evidence that ideas have been revised, examples of edits an evaluation of the task that you have completed including the way you worked with other students	shows a sound understanding of scientific concept and have shown some evidence to improve their investigation, evidence or examples of errors is sound, evidence that ideas have been revised is sound, examples of edits an evaluation of the task that you have completed including the way you worked with other students is limited	shows a limited understanding of scientific concept and have shown some evidence to improve their investigation, evidence or examples of errors is limited, evidence that ideas have been revised is limited, examples of edits an evaluation of the task that you have completed including the way you worked with other students is limited	shows a portion of understanding of an evaluation of the work that they have completed	
		10-9	8-7	6-5	4-3	2-1	0

Section 2 – Visual presentation

Student name _____

	Extensive understanding of A	thorough knowledge of B	Sound knowledge of C	Basic knowledge of D	Elementary knowledge of E	
Creates visual presentation	Presentation is exceptional well made, coherent, and flows well	Presentation is thorough mostly well made, coherent, and flows well	Presentation is sound mostly well made, mostly coherent, and generally flows	Presentation is limited disjointed in parts, somewhat coherent, and flows somewhat	Presentation is made but is not easily linked to any concept	0
	5	4	3	2	1	
Showed creativity in the idea, design and innovation in the development of an original solution.	The idea presented is creative and fits the brief of sustainability solution exceptionally well	The idea presented is creative and fits the brief of sustainability solution to a high standard	The idea presented is creative and fits the brief of sustainability solution to a sound standard	The idea presented is not creative and fits the brief of sustainability solution in a limited way	The idea presented is not creative and does not fit the brief of sustainability solution	0
	5	4	3	2	1	
The presentation identified a need or problem and shows a suitable solution for the identified problem	problem is exceptionally understood and the presentation displays an exceptional, in-depth understanding of a solution to the problem	problem is thoroughly understood and the presentation displays a thorough, in-depth understanding of a solution to the problem	problem is understood and the presentation displays a sound understanding of a solution to the problem	problem is somewhat understood and the presentation displays a limited understanding of a solution to the problem	problem is somewhat understood and the presentation displays a basic understanding of a solution to the problem	0
	5	4	3	2	1	
Demonstrated a deep understanding of the scientific concepts used in the model	the presentation shows an exceptional understanding of the sustainability solution and how the idea fits into an understanding of the science behind the solution to solve an identified problem	the presentation shows a thorough understanding of the sustainability solution and how the idea fits into an understanding of the science behind the solution to solve an identified problem	the presentation shows a sound understanding of the sustainability solution and how the idea fits into an understanding of the science behind the solution to solve an identified problem	the presentation shows a limited understanding of the sustainability solution and how the idea fits into an understanding of the science behind the solution to solve an identified problem	the presentation shows a basic understanding of the sustainability solution and how the idea fits into an understanding of the science behind the solution to solve an identified problem	0
	5	4	3	2	1	
the presentation was engaging	The presentation used an extensive range of visual features to enhance the development of the scientific idea	The presentation used a wide range of visual features to enhance the development of the scientific idea	The presentation used at least three visual features to enhance the development of the scientific idea	The presentation used two visual features to enhance the development of the scientific idea	The presentation used one visual feature to enhance the development of the scientific idea	0
	5	4	3	2	1	

Total Mark _____ /45

Feedback:
