



# ORANGE HIGH SCHOOL

## ASSESSMENT TASK NOTIFICATION

<b>Subject</b>	Science: Design Thinking Report
<b>Year</b>	9
<b>Weighting</b>	30%
<b>Teachers</b>	Mr Warne, Ms Boardman, Ms Mansur, Mr Routh, Ms Rogan, Ms Townsend, Ms Huggett
<b>Head Teacher</b>	Mr Shea
<b>Due Date</b>	Specific day to given by classroom teachers (Term 1 Week 8A)

### Assessment Outline

You will need to produce a design thinking report on a chosen natural disaster

In your report you must:

- Identify and outline a person/group of people affected by a natural disaster (Stage 1 – Empathy)
- Explain the science behind the natural disaster and create a user problem statement (Stage 2 – Define)
- Brainstorm a range of solutions to your user problem statement (Stage 3 – Ideate)
- Develop one idea into a prototype (Stage 4 - Prototype)
- Test and seek feedback on your prototype (Stage 5 – Test)

Use the following scaffold for your report.

### Non-completion of Task:

If you know you are going to be away on the day that the task is due, you must make alternative arrangements with your classroom teacher. If you are away on the day of the examination, you must catch up with your classroom teacher on the first day you return to make alternate arrangements to catch up on this task.

**Failure to follow the above procedures may result in a zero award.**

### Outcomes Assessed

**SC5- 7WS** Process and analyse data and information from secondary sources

**SC5- 8WS** Produce plausible explanations and solutions to identified problems

**SC5- 9WS** Present science ideas using appropriate text and representations

**EN1-10c** Thinks imaginatively and creatively about familiar topics, ideas and texts when responding to and composing texts

# Year 9 Earth and Space Design Thinking Report

Name \_\_\_\_\_

## Choose a Disaster

- Drought - lithosphere/hydrosphere
- Bushfire - biosphere/atmosphere
- Rising sea levels - biosphere/hydrosphere
- Air pollution - atmosphere/biosphere
- Tsunami - Lithosphere/Hydrosphere
- Volcano - Lithosphere/Atmosphere
- Cyclone/Tropical Storm (Hydrosphere/Lithosphere)

**Stage 1 Empathy – Answer the following questions to create a user profile of a person/group of people affected by a natural disaster.**

**Who are you empathizing with?**

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**What do you think they need to do?**

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**What do they see?**

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**What do they say?**

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**What do they do?**

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**What do they hear?**

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**What do they think and feel?**

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**What are their fears, frustrations and anxieties?**

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**What are the needs, hopes, wants and dreams?**

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**Stage 2 - Define - What is the problem you want to solve**  
**Answer the following questions to assist you in understanding the problem**

**Outline your chosen Natural disaster. (What is it?)**

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**Outline the causes of your chosen natural disaster.**

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**Describe how your chosen natural disasters affects people.**

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**Describe where your chosen natural disaster occurs. (Include a map if possible)**

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**Outline the human influences that increase the severity of your chosen natural disaster.**

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**Create a reference list (where did you get your information from?)**

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**Create a User need statement - What problem do you want to solve?**

\_\_\_\_\_ (User) needs a way to \_\_\_\_\_ (verb)

**because**

\_\_\_\_\_ (suprising  
**insight)**

**Stage 3 - Ideate - Create solutions to your problem established in Stage 2**

**Brainstorm as many solutions as possible to your user problem statement**

**Place your ideas into the following table to assist you in selecting the best ideas**

	<b>Low Cost</b>	<b>High Cost</b>
<b>HIGH IMPACT</b>	<b>Great Ideas</b>	<b>Good Ideas</b>
<b>LOW IMPACT</b>	<b>Weak Ideas</b>	<b>Bad Ideas</b>

Illustration © HatRabbits

**Choose ONE idea to prototype – Explain why it is the best idea to solve your user statement problem**

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## Selecting an idea to prototype:

You must be able to answer the following questions

- What problem do we solve? (user problem)
- For whom are we doing this? (target audience)
- Why are we doing this? (vision)
- How are we doing this? (strategy)
- What do we want to achieve? (goal)

### Product/service Statement

In order to (Vision)

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Your product/service will assist (Target audience)

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To solve the problem of (User Problem)

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By giving them (Strategy/Product/Service)

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We will know our product works when we see (Goal)

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## **Stage 4 - Prototype**

**Take the idea that is most feasible to develop further into a prototype.**

**A Prototype can be:**

- **A series of labelled drawings**
- **A computer generated model (2D or 3D)**
- **A Story or short written piece**
- **A newspaper or advertisement that showcases your idea**

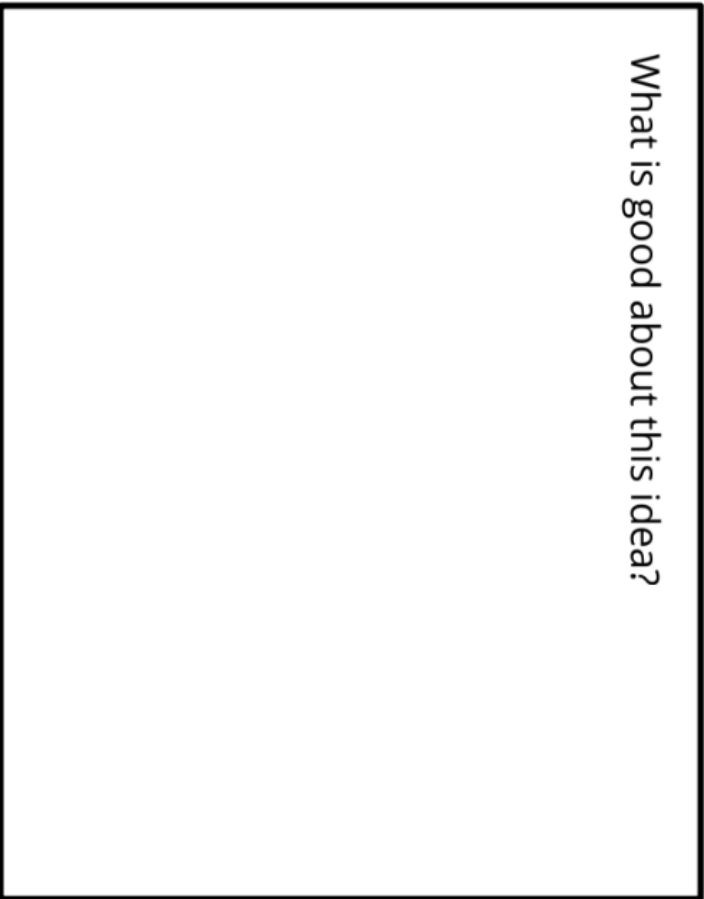
**All prototypes will have to explain how your idea will function and meet the needs of your chosen user.**



# 5 Test your idea with others

Show your prototype sketch to others, and ask them to criticize it, so you can make it better.

What is good about this idea?



How could this idea be better?



Course Outcomes		A 5	B 4	C 3	D 2	E 1	0	WS Total
	<b>Sections from assessment task</b>	Has achieved a very high level of competence in the processes and skills and can apply these skills to new situations. <b>(EXTENSIVE)</b>	A high level of competence in the processes and skills. In addition, the student is able to apply these skills to most situations. <b>(THOROUGH)</b>	An adequate level of competence in the processes and skills. <b>(SOUND)</b>	A limited level of competence in the processes and skills. <b>(BASIC)</b>	Very limited competence in some of the processes and skills. <b>(ELEMENTARY)</b>	Not attempted	
<b>Stage 1 Empathy EN1-10c</b> thinks imaginatively and creatively about familiar topics, ideas and texts when responding to and composing texts <b>SC4- 7WS</b> Process and analyse data from secondary sources	<b>Empathy Profile</b>	5  Deep and thoughtful understanding of the requirements of an individual in response to their chosen natural disaster	4  Detailed understanding of the requirements of an individual in response to their chosen natural disaster	3  Good understanding of the requirements of an individual in response to their chosen natural disaster	2  Simple understanding of the requirements of an individual in response to a natural disaster	1  Some understanding of the requirements of an individual		<b>WS7</b>
<b>Stage 2 Define SC4- 7WS</b> Process and analyse data from secondary sources	<b>Research</b>	3  Extensive use of visuals to enhance meaning. Including only relevant pictures, tables, graphs etc + Detailed explanation of impacts of chosen natural disaster on humans	X	2  Good use of visuals to enhance meaning. Including mostly relevant pictures, tables, graphs etc + Description of impacts of chosen natural disaster on humans	X	1  Basic use of visuals to enhance meaning. A relevant picture, table or graph OR Some mention of impacts of chosen natural disaster on humans	0	<b>/10</b>
	<b>User need statement</b>	X	X	2  Clearly articulated user requirements and problems in relation to their researched natural disaster	X	1  User requirements or problems listed	0	

<p><b>Stage 3 Ideate</b> <b>SC4- 8WS</b> Produce plausible solutions to identified problems</p>	<p><b>Ideation product statement</b></p>	<p>10-9 Extensive list of creative ideas + Generated ideas both problem-recognising and problem-solving as identified in the user need statement + Refined ideas carefully selected and applied to context of natural disaster</p>	<p>8-7 Detailed list of creative ideas + Generated ideas both problem-recognising and problem-solving as identified in the user need statement + Refined ideas selected and applied to context of natural disaster</p>	<p>6-5 Good list of creative ideas + Generated ideas problem-recognising OR problem-solving as identified in the user need statement + Selected idea has been refined or modified</p>	<p>4-3 List of creative ideas + Ideas are linked to user need statement + Selected idea has been refined or modified</p>	<p>2-1 list of ideas + Ideas are linked to chosen natural disaster</p>	<p>0</p>	<p><b>WS8</b></p>
<p><b>Stage 4 Prototype</b> <b>SC4- 8WS</b> Produce plausible solutions to identified problems</p>	<p><b>Prototype</b></p>	<p>10-9 Exemplary explanation given + Demonstrated a deep understanding of the concept + Excellent description of the science behind the concept. + Explanation of how the concept can be beneficial to humans in the future</p>	<p>8-7 Detailed explanation given + Demonstrated a deep understanding of the concept + Detailed description of the science behind the concept. OR Explanation of how the concept can be beneficial to humans in the future</p>	<p>6-5 Good explanation given + Demonstrated a good understanding of the concept + Good description of the science behind the concept. OR Good description of how the concept can be beneficial to humans in the future</p>	<p>4-3 Simple explanation given + Demonstrated a sound understanding of the concept + Simple description of the science behind the concept or benefit to humans</p>	<p>2-1 Simple explanation given + Demonstrated a basic understanding of the concept</p>	<p>0</p>	<p><b>/20</b></p>
<p><b>Stage 5 Test</b> <b>SC5- 9WS</b> Present science ideas using appropriate text and representation</p>	<p><b>Test – Peer Feedback</b></p>	<p>10-9 Provides extensive reflective analysis to outline enhancements to created/designed prototype based on peer feedback</p>	<p>8-7 Provides detailed reflective analysis to outline enhancements to created/designed prototype based on peer feedback</p>	<p>6-5 Provides analysis to outline enhancements to created/designed prototype based on peer feedback</p>	<p>4-3 Provides summaries feedback and lists some enhancements to prototype based on peer feedback</p>	<p>2-1 Lists some enhancements to prototype</p>	<p>0</p>	<p><b>WS9</b>         <b>/10</b></p>

<p><b>Result</b></p>	<p><b>Grade Total</b></p>	<p><b>A</b> <b>40 - 35</b></p>	<p><b>B</b> <b>34 - 25</b></p>	<p><b>C</b> <b>24 - 10</b></p>	<p><b>D</b> <b>9 - 5</b></p>	<p><b>E</b> <b>4 – 0</b></p>	
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**Comments:**

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