



# ORANGE HIGH SCHOOL

## ASSESSMENT TASK 2

<b>Subject</b>	Earth and Environmental Science
<b>Topic</b>	Hazards
<b>Class Teacher</b>	Ms J Mansur
<b>Head Teacher</b>	Ms J Huggett
<b>Year</b>	12
<b>Date Given</b>	Wednesday 19 <sup>th</sup> July 2023 (Week 1, Term 3)
<b>Date Due</b>	Wednesday 2nd August 2023 (Week 3, Term 3)
<b>Weighting</b>	35%

### Assessment Outline

As part of the Year 12 Earth & Environmental Science course, students will be required to investigate and evaluate the effectiveness of technologies in predicting natural disasters.

#### **The Task:**

- 1) Undertake a first-hand investigation to model a simple engineering solution's impact in mitigating the impact of a named geological natural disaster, specifically a volcano or an earthquake. Additionally, predict the physical model's success and evaluate your model's effectiveness.
- 2) Carry out secondary data research on the design principles (building codes, disaster warning systems and educational instruction) that underpin the mitigation strategies linked to minimising the impact of the named natural disaster and evaluate their effectiveness.
- 3) The collected information will be presented in a report following the headings below.

**Your report will include the investigation and the research and will be a maximum of four A4 pages.**

**Your report should use multiple sources of information and all should be correctly cited using the APA style (got to: <https://www.citethisforme.com>).**

**The task is worth 35% of your course marks.**

#### 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 teacher beforehand. If you are suddenly away on the day that the task is due, you must contact your teacher or Head Teacher on your return to school. Documentation will be required in both cases.

#### Plagiarism:

Plagiarism, the using of the work of others without acknowledgement will incur serious penalties and may result in a zero award. Any cheating will also incur penalties.

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

**The policies and procedures that are outlined in the OHS Higher School Certificate Assessment Booklet will be followed regarding the non-completion of assessment tasks.**

## Outcomes Assessed

This task will evaluate a student's ability in the following course outcomes.

- **EES 12.1 Questioning and predicting**  
-Develops and evaluates questions and hypotheses for scientific investigation
- **EES 12.2 Planning investigations**  
-Designs and evaluates investigations in order to obtain primary and secondary data and information
- **EES 12.3 Conducting investigations**  
-Conducts investigations to collect valid and reliable primary and secondary data and information
- **EES 12.6 Problem solving**  
-Solves scientific problems using primary and secondary data, critical thinking skills and scientific processes
- **EES 12.7 Communicating**  
- Communicates scientific understanding using suitable language and terminology for a specific audience
- **ESS12-13** - Describes and evaluates the causes of the Earth's hazards and the ways in which they affect and are affected by the Earth's systems

Utilise the following scaffold to complete your report:

### Part 1: First-hand Investigation

1. Named geological disaster
2. Background including location and date of the event
3. Model information: prediction of how your model will respond to the mitigation strategy you chose, include pictures and/or videos
4. Testing: show evidence of the test, include pictures and/or videos
5. Evaluation of your model's effectiveness and limitations

### Part 2: Research and Evaluate

1. Mitigation solutions
  - a. Building codes
  - b. Disaster warning systems
  - c. Educational instructions

*(Note: relate your research and evaluation back to the secondary information gathered through in text referencing)*

### Part 3: Bibliography

Your report should use multiple sources of information and all should be correctly cited using the APA style (got to: <https://www.citethisforme.com>).

**Marking Rubric: Depth Study Portfolio and Presentation**
**NAME:** \_\_\_\_\_

<b>Outcomes Assessed:</b>	<b>Task section</b>	<b>Basic (D)</b>	<b>Sound (C)</b>	<b>Thorough (B)</b>	<b>Extensive (A)</b>	<b>Total:</b>
<b>WS12 – 1</b> Develops and evaluates questions and hypotheses for scientific investigation	<b>Part 1</b> <b>First-hand investigation</b> 1 2 5	<ul style="list-style-type: none"> <li>Geological disaster named</li> <li>Simple background information</li> <li>Basic prediction of models effectiveness</li> <li>Simple assessment of models effectiveness and limitations</li> </ul> <b>1 – 2 marks</b>	<ul style="list-style-type: none"> <li>Geological disaster named</li> <li>Some background information</li> <li>An prediction of models effectiveness</li> <li>Description of models effectiveness and limitations</li> </ul> <b>3 – 6 marks</b>	<ul style="list-style-type: none"> <li>Geological disaster named</li> <li>Detailed background information</li> <li>Detailed prediction of models effectiveness</li> <li>Detailed description of models effectiveness and limitations</li> </ul> <b>7 – 8 marks</b>	<ul style="list-style-type: none"> <li>Geological disaster named</li> <li>Extensive background information</li> <li>Extensive prediction of models effectiveness</li> <li>Extensive description of models effectiveness and limitations</li> </ul> <b>9 – 10 marks</b>	
<b>WS12 – 2</b> Designs and evaluates investigations in order to obtain secondary data, critically thinking skills and scientific processes	<b>Part 1</b> <b>First-hand investigation</b> 3 4	<ul style="list-style-type: none"> <li>Incomplete prediction of models response to mitigation strategy</li> <li>Includes a visual representation of the model</li> <li>Includes a visual representation of the model being tested</li> </ul> <b>1 mark</b>	<ul style="list-style-type: none"> <li>A prediction of models response to mitigation strategy included</li> <li>Includes a visual representation of the model with some explanation</li> <li>Includes a visual representation of the model being tested with some explanation</li> </ul> <b>2 marks</b>	<ul style="list-style-type: none"> <li>Detailed prediction of models response to mitigation strategy</li> <li>Includes a visual representation of the model with detailed explanation</li> <li>Includes a visual representation of the model being tested with detailed explanation</li> </ul> <b>3-4 marks</b>	<ul style="list-style-type: none"> <li>Extensive prediction of models response to mitigation strategy</li> <li>Includes a visual representation of the model with extensive explanation</li> <li>Includes a visual representation of the model being tested with extensive explanation</li> </ul> <b>4-5 marks</b>	
<b>WS12 – 6</b> Solves scientific problems using primary and secondary data, critical thinking skills and scientific processes	<b>Part 2</b>	<ul style="list-style-type: none"> <li>Presents limited information</li> <li>Shows limited ability to evaluate the technologies to minimise the effects</li> <li>Evaluation lacks logical flow</li> </ul> <b>1 – 3 marks</b>	<ul style="list-style-type: none"> <li>Information is included</li> <li>Evaluation to minimise technologies demonstrated</li> <li>Evaluation demonstrates logical flow</li> </ul> <b>4 – 7 marks</b>	<ul style="list-style-type: none"> <li>Detailed information is included</li> <li>Detailed evaluation to minimise technologies demonstrated</li> <li>Evaluation demonstrates detailed and logical flow</li> </ul> <b>8-11 marks</b>	<ul style="list-style-type: none"> <li>Extensive information is included</li> <li>Extensive evaluation to minimise technologies demonstrated</li> <li>Presents logical and cohesive research supporting evaluation with evidence</li> </ul> <b>12-15 marks</b>	
<b>WS12 – 7</b> Communicates scientific understanding using suitable language and terminology for a specific audience	<b>Part 3</b> <b>Bibliography and use of scientific terminology</b>	<ul style="list-style-type: none"> <li>Report organisation is followed correctly</li> <li>Bibliography (less than 4 supplied)</li> <li>Links Part 2 to bibliography</li> <li>Report has grammatical errors</li> <li>Minimal use of scientific terminology</li> </ul> <b>1-2 marks</b>	<ul style="list-style-type: none"> <li>Report organisation is followed correctly</li> <li>Bibliography (5 – 9 supplied)</li> <li>Links Part 2 to bibliography (5 sources)</li> <li>Some grammatical errors</li> <li>Students use some scientific terminology</li> </ul> <b>3-5 marks</b>	<ul style="list-style-type: none"> <li>Report organisation is followed correctly and is mostly the same as the scaffold</li> <li>Bibliography (10-14 supplied)</li> <li>Links Part 2 to bibliography (5 - 9 sources)</li> <li>Minimal grammatical errors</li> <li>Thorough use of scientific terminology</li> </ul> <b>6-8 marks</b>	<ul style="list-style-type: none"> <li>Report organisation is followed correctly and is 100% the same as the scaffold</li> <li>Bibliography (minimum 15 supplied)</li> <li>Links Part 2 to a completed bibliography (minimum 10 sources)</li> <li>No grammatical errors</li> <li>Use of scientific terminology is at an exemplary level</li> </ul> <b>9-10 marks</b>	
<b>Total Marks:</b>						<b>__/40</b>

**Teacher Feedback:**


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