**Stage 1 Earth and Environmental Science:**

**Assessment Type 1 (SHE): Living Near an Earth Hazard**

Our planet is dynamic with many different types of Earth hazards occurring. These include earthquakes, volcanic eruptions, tsunamis, hurricanes, cyclones, floods, droughts, and landslides. Earth hazards affect life, health, poverty, and the environment, particularly in urban areas.

Many people on Earth live in or near an area that has been negatively impacted by an Earth hazard and is highly likely to be affected again in the future. They live there for social, economic, environmental and cultural reasons.

This task has a focus on Science as a Human Endeavour (SHE), which examines ways in which science interacts with society. Earth and environmental scientists collect data that they use to review theories about the causes of Earth hazards and to develop strategies for minimising harm from Earth hazards.

**Part A: Background Research**

Investigate different urban areas that are likely to be affected by Earth hazards in the future.

Identify reasons why people choose to live in these areas and the past and potential problems caused by the hazards.

**Part B: Presentation**

Select one urban area that is affected by an Earth hazard, somewhere in the world that interests you. You are an Earth and Environmental scientist who will research the past and potential future harm of the Earth hazard in this location. The country’s main Government has funding available to improve the safety of the area. You have been asked to submit a proposal to the Government about how you think those funds would best be allocated. Remember that not everyone in the Government has a solid understanding of the area or the hazard.

You will present your proposal to the class, who will represent the Government. You may choose an appropriate format, such as PowerPoint, Prezi, speech or a video, and you can use props, offer hand-outs, write on the interactive whiteboard or interact with the audience.

Your presentation should include the following:

* Identification of the location of a community affected by an Earth hazard
* Reasons why people choose to live in this area
* The past and potential effects of this hazard on the area
* Explanation of the Earth processes that cause this hazard
* Use of one or more aspect from the four categories of SHE ideas (from the subject outline) to explain how scientific knowledge is being used to benefit people living in this area; this could include techniques for monitoring and/or predicting the Earth hazard and an action plan for harm minimisation when the Earth hazard occurs
* Justification for using the funding for your strategy to help minimise potential future harm to this area

A **reference list** and **script** of your presentation is to be handed up at the beginning of all of the presentations.

**Assessment Conditions**

Students have two weeks to complete the task. Some class time will be allocated for research and preparation. Students must submit one draft for feedback. Due date:

The presentation should be a maximum of 1000 words if written or 6 minutes for an oral presentation, or the equivalent in multimodal form. Due date:

**Performance Standards for Stage 1 Earth and Environmental Science**

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|  | Investigation, Analysis, and Evaluation | Knowledge and Application |
| A | Designs a logical and coherent earth and environmental science investigation with detailed justification.  Obtains, records, and represents data, using appropriate conventions and formats accurately and highly effectively.  Systematically analyses and interprets data and evidence to formulate logical conclusions with detailed justification.  Critically and logically evaluates procedures and their effects on data. | Demonstrates deep and broad knowledge and understanding of a range of earth and environmental science concepts.  Develops and applies earth and environmental science concepts highly effectively in new and familiar contexts.  Critically explores and understands in depth the interaction between science and society.  Communicates knowledge and understanding of earth and environmental science coherently with highly effective use of appropriate terms, conventions, and representations. |
| B | Designs a well-considered and clear earth and environmental science investigation with reasonable justification.  Obtains, records, and represents data, using appropriate conventions and formats mostly accurately and effectively.  Logically analyses and interprets data and evidence to formulate suitable conclusions with reasonable justification.  Logically evaluates procedures and their effects on data. | Demonstrates some depth and breadth of knowledge and understanding of a range of earth and environmental science concepts.  Develops and applies earth and environmental science concepts mostly effectively in new and familiar contexts.  Logically explores and understands in some depth the interaction between science and society.  Communicates knowledge and understanding of earth and environmental science mostly coherently with effective use of appropriate terms, conventions, and representations. |
| C | Designs a considered and generally clear earth and environmental science investigation with some justification.  Obtains, records, and represents data, using generally appropriate conventions and formats with some errors but generally accurately and effectively.  Undertakes some analysis and interpretation of data and evidence to formulate generally appropriate conclusions with some justification.  Evaluates procedures and some of their effects on data. | Demonstrates knowledge and understanding of a general range of earth and environmental science concepts.  Develops and applies earth and environmental science concepts generally effectively in new or familiar contexts.  Explores and understands aspects of the interaction between science and society.  Communicates knowledge and understanding of earth and environmental science generally effectively, using some appropriate terms, conventions, and representations. |
| D | Prepares the outline of an earth and environmental science investigation.  Obtains, records, and represents data, using conventions and formats inconsistently, with occasional accuracy and effectiveness.  Describes data and undertakes some basic interpretation to formulate a basic conclusion.  Attempts to evaluate procedures or suggest an effect on data. | Demonstrates some basic knowledge and partial understanding of earth and environmental science concepts.  Develops and applies some earth and environmental science concepts in familiar contexts.  Partially explores and recognises aspects of the interaction between science and society  Communicates basic earth and environmental science information, using some appropriate terms, conventions, and/or representations. |
| E | Identifies a simple procedure for an earth and environmental science investigation.  Attempts to record and represent some data, with limited accuracy or effectiveness.  Attempts to describe results and/or interpret data to formulate a basic conclusion.  Acknowledges that procedures affect data. | Demonstrates limited recognition and awareness of earth and environmental science concepts.  Attempts to develop and apply earth and environmental science concepts in familiar contexts.  Attempts to explore and identify an aspect of the interaction between science and society  Attempts to communicate information about earth and environmental science. |