**Science as a Human Endeavour Task:**

**Water Sustainability**

“Global water issues vary significantly from country to country. The availability of water resources is heavily dependent on climate, geography and population.”

<http://www.environment.gov.au/water/information/education/toolkit/search/global-water-issues>

**Purpose of task**

This task has a focus on the following aspect of Science as a Human Endeavour:

* Scientific knowledge, understanding, and inquiry can enable scientists to develop solutions, make discoveries, design action for sustainability, evaluate economic, social, and environmental impacts, offer valid explanations, and make reliable predictions.

You may wish to address other SHE aspects also.

You will investigate potential solutions that provide sustainable water resources in regions where quality water supplies are scarce. You may wish to focus on one specific region or several similar situations globally. You should include research findings that have identified issues or made recommendations for solutions to problems.

The focus of your investigation should be on one aspect of increasing water sustainability such as the monitoring of water quality, the effect on marine ecosystems of desalination of sea water, or

You should construct a question related to the focus of your investigation to guide your research. For example, the question could be “*should desalination plants be used more extensively in Australia?*” or “*what have we learned from monitoring the water quality in (region)?*” or “*how is scientific research providing strategies for more sustainable water use in the Murraylands region?”*

**Part A: Information Search and Planning**

Use the internet and other sources of information to do an initial search for an infographic about global water resources and water sustainability. Choose a focus area and then select and record further resources in a reference list, using Harvard referencing, to assist in your selection of information for your report.

Check your sources and the question you have chosen with your teacher before you proceed.

Date Due:

Search for any further information that will enable you to provide a comprehensive and detailed report, with highly relevant earth and environmental science. Choose the format of your work. The report may be presented in any suitable format; suggestions include interview with an expert, newspaper article, multimedia presentation or poster.

Check in with your teacher for feedback.

Date Due:

**Part B: Report**

Your report should include:

* Relevant earth and environmental science concepts or background
* Data on water usage in the region of your investigation
* Positive and negative economic, social, and environmental impacts of various options for water use in the region
* A conclusion that answers your question about action for water sustainability
* In text referencing and a reference list using Harvard referencing.

**Assessment Conditions:**

Some class time is provided for research and support. Students have 2 weeks to complete the task.

Students may submit one draft for feedback.

Word Count: maximum of 1000 words or 6 minutes for an oral presentation.

**Assessment Design Criteria**

Investigation, Analysis and Evaluation: IA 3 Knowledge and Application: KA 3, 4

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

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| --- | --- | --- | --- | --- | --- | --- |
|  | | **A** | **B** | **C** | **D** | **E** |
| **Investigation, Analysis and Evaluation** | **1**  **2**  **3**  **4** | Designs a logical, coherent, and detailed earth and environmental science investigation.  Obtains records, and represents data, using appropriate conventions and formats accurately and highly effectively.  Systematically analyses data and evidence to formulate logical conclusions with detailed justification.  Critically and logically evaluates procedures and their effects on data. | Designs a well-considered and clear earth and environmental science investigation.  Obtains, records, and represents data, using appropriate conventions and formats mostly accurately and effectively.  Logically analyses data and evidence to formulate suitable conclusions with reasonable justification.  Logically evaluates procedures and their effects on data. | Designs a considered and generally clear earth and environmental science investigation.  Obtains, records, and represents data, using generally appropriate conventions and formats with some errors but generally accurately and effectively.  Makes some analysis of data and evidence to formulate generally appropriate conclusions with some justification.  Evaluates procedures and some of their effects on data. | Prepares the outline of a earth and environmental science investigation.  Obtains, records, and represents data, using conventions and formats inconsistently, with occasional accuracy and effectiveness.  Describes data and formulates a basic conclusion.  Attempts to evaluate procedures or suggest an effect on data. | Identifies a simple procedure for a earth and environmental science investigation.  Attempts to represent some data, with limited accuracy or effectiveness.  Attempts to describe results and/or attempts to formulate a basic conclusion.  Acknowledges that procedures affect data. |
| **Knowledge and Application** | **1**  **2**  **3**  **4** | Demonstrates deep and broad knowledge and understanding of a range of earth and environmental science concepts.  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. | Demonstrates some depth and breadth of knowledge and understanding of a range of earth and environmental science concepts.  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. | Demonstrates knowledge and understanding of a general range of earth and environmental science concepts.  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. | Demonstrates some basic knowledge and partial understanding of earth and environmental science concepts.  Applies some earth and environmental science concepts in familiar contexts.  Partially explores and recognises aspects of the interaction between science and society.  Communicates basic chemical information, using some appropriate terms, conventions, and/or representations. | Demonstrates some limited recognition and awareness of earth and environmental science concepts.  Attempts to 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. |