Yr 12 Earth and Environmental Science

Module 8 Resource Management Scientific Report,

Assessment Task 2, 2024

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| **TOPIC**: Module 8: Resource Management  | **MARKS: 40**  |
| **SUBMISSION REQUIREMENTS:** **All** components for Part A , Part B, Part C and Part D; must be submitted in class **Period 2 Wednesday 20th March, Term 1 Week 8.** | **WEIGHT: 20 %**  |
| **OUTCOMES TO BE ASSESSED:****EES12-5 analyses** and **evaluates** primary and secondary data and information**EES12-6** **solves** scientific problems using primary and secondary data, critical thinking skills and scientific processes**EES12-7** **communicates** scientific understanding using suitable language and terminology for a specific audience or purpose**EES12-15 describes** and **assesses** renewable and non-renewable Earth resources and how their extraction, use, consumption and disposal affect the Earth’s systems |
| **DIRECTIONAL VERBS:****Analyses:** Identify components and the relationship between them; draw out and relate implications.**Evaluate:** Make a judgement based on criteria; determine the value of. **Solves:** find an answer to, explanation for, or means of effectively dealing with**Conducts:** organise and carry out**Communicates:** share or exchange information or ideas**Collect:** bring or gather together**Assess:** Make a judgement of value, quality, outcomes, results or size |
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| **Task Description: Research Task-Resource Management**In this task, students will engage in a first-hand investigation by completing a waste audit of Camden High School. Australia has a huge waste problem. We are one of the most wasteful countries in the developed world, the waste we are generating is growing at twice the rate of our population. To ensure accountability and proactive decisions about consumption students will conduct a personal waste audit, evaluate current LGA waste practices, and make evidence-based recommendations for future waste management. |
| **Assessment criteria:****Part A**- Students will conduct a **first-hand investigation**: Waste Audit of Camden High School which they will then present in a **scientific report** style; aim, risk management, method, results, conclusion. **Part B**- Students will conduct **research, compare and evaluate** **TWO** Sydney council waste management strategies related to a category of the waste audit performed at school. **Part C**- Students will **justify** a series of recommendations (evidenced) that their school can make to better manage their waste and show how this can relate to the greater community. **Part D**- Students will **list** their research in the form of a reference list.**Instructions** • Ensure your name, class, and teacher is clearly labelled. • All work submitted must be original and completed individually. (NOTE: Any work deemed to be plagiarised will be treated as a non-serious attempt and dealt an appropriate consequence in accordance with the school and faculty policy) |

**Waste Management in Australia**

**PART A: Conduct a Waste Audit (first hand investigation)**

A Waste Audit helps to work out how much waste we create in our school/at home, and what type of items make up our waste stream.

It’s like a survey, collecting information on the amount and type of waste, which will allow us to look at ways in which we can reduce the amount of waste leaving the school/home and going to landfill.

By conducting this audit, you can estimate the weight, volume and type of waste produced by your school/home, and can look at ways to better manage this waste.

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| Aim: Risk Assessment:

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| *Hazard* | *Injury* | *Likelihood* | *Management* |
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Apparatus:Method: Results:Date of assessment: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Waste Audit** (Total bins measured: \_\_\_\_\_) | **Food Scraps** | **Recyclables** | **General Waste** |
| *Volume* *(buckets)* |  |  |  |
| *Mass**(kg)* |  |  |  |

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| A) Calculate the total amount of food, recyclables, and paper waste.This is all the waste that could be kept out of the landfill if we recycle and compost more effectively. | Calculation | \_\_\_\_\_\_\_\_\_\_ kg |
| B) Calculate the total amount of all three wastes | Calculation | \_\_\_\_\_\_\_\_\_\_ kg |
| C) Work out how many regular school days are in a year and multiply the total amount of waste by that number. This will give an estimate of the kg of waste made by students in a year. | Calculation | \_\_\_\_\_\_\_\_\_\_ kg |

Present your findings in a tabulated and graphical form and interpret.Conclusion:  |

**PART B Comparing Sydney Council’s Waste Management**

This part of the task will require you to research, compare and evaluate **TWO** Sydney council waste management strategies. These can generally be found via the council websites. For example, the Sydney Inner West Council provides its waste management strategies under *Live -> Environment and sustainability -> At Council* <https://www.innerwest.nsw.gov.au/>

In your report:

a) **Outline** key features of each Council's waste management strategy (you will not be able to focus deeply on each area of the strategies, but may choose to focus on a key element ,eg green waste).

b) **Evaluate and Compare** the waste management strategies of the two councils (see evaluate scaffold below to assist.)

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| Waste Management Category\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Chosen Council |  |  |
| Beneficial aspects of management strategies |  |  |
| Unfavourable aspects of management strategies |  |  |
| Judgement of council waste management |  |  |
|  |
| Comparison of council waste management |

**PART C: Making recommendations**

1. Create a 500 word report (maximum) that references the findings of your waste audit and your research on innovative/appropriate waste management strategies. Make referenced and evidence based recommendations to how your household/school can improve their management of waste moving forward. Refer to how these recommendations can have an impact on the greater community and the flow on effects from these local changes To emphasise your argument you may wish to include secondary investigation data and findings about current waste statistics at a national level.

**PART D – Reference List**

Whenever you include a fact or piece of information in your Investigation you must also include where you found that piece of information. The bibliography is a list of all the sources you used to generate your ideas; this means you must include any resources that you referred to or read about on the topic.

Supply a Reference List of the sources you used using the Harvard style format of referencing.

A Harvard referencing style guide is shown below

The following information is needed in this order:

Author’s last name/authoring body,  Initials, Date or most recent update or revision, *Title of document*, Name of publisher, Place of publication, Date viewed, URL

Some examples:

* Commonwealth of Australia, 2006, *Anzac Day,* Australian Government Culture and Recreation Portal, Commonwealth of Australia, 5th June 2006, <http://www.cultureandrecreation.gov.au/articles/anzac/#top>
* Pan MacMillan Australia, 2006 *(Almost) Everything There Is To Know About John Marsden,* Pan McMillan Australia, Sydney, viewed June 5 2006, <http://www.panmacmillan.com.au/johnmarsden/index.htm>

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|  Year 12 Earth and Environmental Science – Scientific Report Marking Guidelines |

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| Outcomes: Analysing data and information (EES12-5) Problem solving (EES12-6) Communication (EES12-7) Assessing resources (EES12-15) |

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| **Part A** | **Not evident** | **Limited** | **Basic** | **Sound** | **High** | **Outstanding** |
|  | -Demonstrates a basic ability to present findings of the waste audit.-Demonstrates a basic ability to interpret primary data to provide conclusions to waste audit findings. | -Demonstrates a limited ability to present findings of the waste audit.-Demonstrates a limited ability interpret primary data to provide conclusions to waste audit findings. | -Demonstrates a sound ability to present findings of the waste audit.-Demonstrates a sound ability to interpret primary data to provide accurate conclusions to waste audit findings. | -Demonstrates a thorough ability to present findings of the waste audit.-Demonstrates a thorough ability to accurately interpret primary data to provide accurate conclusions to waste audit findings. | -Demonstrates an extensive ability to present findings of the waste audit.-Demonstrates an extensive ability to accurately interpret and extrapolate primary data to provide accurate conclusions to waste audit findings. |
| *0 marks* | *1-2 marks* | *3-4 marks* | *5-6 marks* | *7-8 marks* | *9-10 marks* |
| **Part B** | No attempt made at scientific terminology | -Demonstrates a basic ability to outline council waste management strategies-No attempt made at scientific terminology | -Demonstrates a limited ability to describe council waste management strategies- Limited use of scientific and appropriate terminology to demonstrate familiarity with the language of the topic-identifies features of a council’s waste management | -Demonstrates a sound ability to compare council waste management strategies-uses basic scientific terminologywith limited information-identifies features of each council’s waste management  | -Demonstrates a thorough ability to evaluate and compare council waste management strategies- uses language that is mostlyclear and relevant with accuratescientific terminology andinformation-outlines features of each council’s waste features | -Demonstrates an extensive ability to evaluate and compare council waste management strategies- uses language that is clear and precise with accurateand relevant scientificterminology and information-outlines key features of each council’s waste management |
| *0 marks* | *1-2 marks* | *3-4 marks* | *5-6 marks* | *7-8 marks* | *9-10 marks* |
| **Part C** | No attempt made at making waste management recommendations | --Demonstrates basic problem-solving skills to produce recommendations into waste management -limited knowledge of waste resources and management demonstrated-Demonstrates a limited understanding of the current situation for waste management in schools- Provides limited recommendations about how the school can improve their management of waste moving forward | --Demonstrates limited problem-solving skills to produce recommendations into waste management -Basic knowledge of waste resources and management demonstrated-Demonstrates a basic understanding of the current situation for waste management in schools-Demonstrates basic knowledge and understanding of analysing data that predicts future consequences of waste management- Provides basic recommendations about how the school can improve their management of waste moving forward | --Demonstrates sound problem-solving skills to produce recommendations into waste management -Sound knowledge of waste resources and management demonstrated-Demonstrates a sound understanding of the current situation for waste management in schools-Demonstrates sound knowledge and understanding of analysing data that predicts future consequences of waste management- Provides sound and accurate recommendations about how the school can improve their management of waste moving forward- uses an appropriatepresentation style | --Demonstrates thorough problem-solving skills to produce insightful recommendations into waste management and the impacts on the greater community-Thorough knowledge of waste resources and management demonstrated-Demonstrates a thorough understanding of the current situation for waste management in schools-Demonstrates thorough knowledge and understanding of analysing data that predicts future consequences of waste management- Provides thorough and accurate recommendations about how the school can improve their management of waste moving forward- uses an informative and mostly easy to read presentation style | -Demonstrates extensive problem-solving skills to produce novel and insightful recommendations into waste management and the impacts on the greater community- Extensive knowledge of waste, resources and management demonstrated.-Demonstrates a thorough understanding of the current situation for waste management in school.- Demonstrates extensive knowledge and understanding of analysing data that predicts future consequences of waste management- Provides extensive, succinct, and accurate recommendations about how the school can improve their management of waste moving forward- uses an informative and easy to read presentation style relevant to the targeted audience |
| *0 marks* | *1 – 3 marks* | *4-6 marks* | *7-9 marks* | *10-12 marks* | *13-15 marks* |
| **Part D** |  | - acknowledges sources by providing an accurate reference list using the appropriate referencing style - 1-2 number of references used  | -- uses multiple, varied data/sources of information - acknowledges sources by providing an accurate reference list using the appropriate referencing style - 1-2 number of references used - references from reliable and valid sources | - uses suitable data and source information - acknowledges sources by providing an accurate reference list using the appropriate referencing style - 3-4 number of references used - references from reliable sources | - cites specific, comprehensiveevidence (eg examples, data,information) -- uses multiple, varied data/sources of information - acknowledges sources by providing an accurate reference list using the appropriate referencing style - 5-6 number of references used - references from reliable and valid sources | - cites specific, comprehensiveevidence (eg examples, data,information) -- uses multiple, varied data/sources of information - acknowledges sources by providing an accurate reference list using the appropriate referencing style - >6 number of references used - references from reliable and valid sources |
| *0 marks* | *1 marks* | *2 marks* | *3 marks* | *4 marks* | *5 marks* |
|  |  | *Mark* | *Percentage* | *Rank* |
|  | Feedback |