

Assessment Task Notification

RESPECT | RESPONSIBILITY | PERSONAL BEST



Faculty: Science	Course: Stage 6 - Year 11 EES	Time allowed: 3.5 Weeks
Teacher: Fearnley/Mesina		Email: frank.mesina@det.nsw.edu.au
Task number: 2	Title: Depth Study – EES Skills	
Year: 11	Due date: 8:15am 11 August 2023	Weighting: 30%

Syllabus outcomes assessed:

EES11/12-1 develops and evaluates questions and hypotheses for scientific investigation
 EES11/12-2 designs and evaluates investigations in order to obtain primary and secondary data and information
 EES11/12-3 conducts investigations to collect valid and reliable primary and secondary data and information
 EES11/12-4 selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media
 EES11/12-5 analyses and evaluates primary and secondary data and information
 EES11/12-6 solves scientific problems using primary and secondary data, critical thinking skills and scientific
 EES11/12-7 communicates scientific understanding using suitable language and terminology for a specific audience or purpose
 EES11-8 describes the key features of the Earth's systems, including the geosphere, atmosphere, hydrosphere and biosphere and how they are interrelated
 EES11-9 describes the evidence for the theory of plate tectonics and the energy and geological changes that occur at plate boundaries
 EES11-11 describes human impact on the Earth in relation to hydrological processes, geological processes and biological changes

21st Century and employment related skills:

<input checked="" type="checkbox"/>	Communication	<input checked="" type="checkbox"/>	Use of technology
<input checked="" type="checkbox"/>	Critical Thinking	<input checked="" type="checkbox"/>	Self-reflection and refinement
<input type="checkbox"/>	Creativity	<input checked="" type="checkbox"/>	Problem Solving
<input type="checkbox"/>	Collaboration	<input type="checkbox"/>	Initiative and Enterprise
<input checked="" type="checkbox"/>	Planning and Organising	<input type="checkbox"/>	Cross-Cultural Understanding

Task description:

Students investigate, describe and analyse how human activity has and continues to impact on our Earth.

Students are to use the knowledge, understanding, the supplied data and research skills to answer set questions describing the interrelationships of the Earth's environment and describe the impacts of living organisms on the environment, in particular human activities and their impacts.

Assessment criteria:

You will be assessed on your ability to: See attached criteria

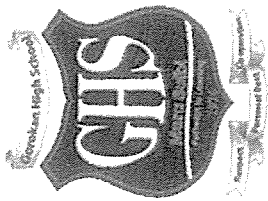
NOTE: Change in assessment schedule. Due date for this task has changed from Week 4 Term 3 to 8:15am Friday 11 August 2023 - New assessment schedule attached.

Method of task submission:

Hand in to Library, by 8:15am, Friday 11 August 2023

Marking guidelines:

Grade	Descriptor	Mark
A		
B		
C		
D		
E		
N (Stages 5 and 6)		



Gorokan High School
Year 11 Assessment Schedule 2023
Earth and Environmental Science

Task number	Task 1	Task 2	Task 3
Name of Task	Geological Resources Case Study	Depth Study - EES Skills*	Yearly Examination
Task Due	Term 1, Week 9	Term 3, Week 4	Term 3, Week 9
Outcomes assessed	EES11/12-3, 4, 5, 6, 7 EES11-8	EES11/12-1, 2, 4, 3, 5, 6, 7 EES11-8, 9, 11	EES11/12- 2, 4, 5, 6, EES11 – 8, 9, 10, 11
Components	Task Weighting %		
Skills in Working Scientifically	20	20	20
Knowledge and understanding	10	10	20
Total %	30	30	40
			100

* This task replaces the proposed Sedimentation and Human task.

Course Outcomes:

Questioning and predicting

EES11/12-1 develops and evaluates questions and hypotheses for scientific investigation

Planning investigations

EES11/12-2 designs and evaluates investigations in order to obtain primary and secondary data and information

Conducting investigations

EES11/12-3 conducts investigations to collect valid and reliable primary and secondary data and information

Processing data and information

EES11/12-4 selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media

Analysing data and information

EES11/12-5 analyses and evaluates primary and secondary data and information

Problem solving

EES11/12-6 solves scientific problems using primary and secondary data, critical thinking skills and scientific processes

Communicating

EES11/12-7 communicates scientific understanding using suitable language and terminology for a specific audience or purpose

EES11-8 describes the key features of the Earth's systems, including the geosphere, atmosphere, hydrosphere and biosphere and how they are interrelated

EES11-9 describes the evidence for the theory of plate tectonics and the energy and geological changes that occur at plate boundaries

EES11-10 describes the factors that influence how energy is transferred and transformed in the Earth's systems

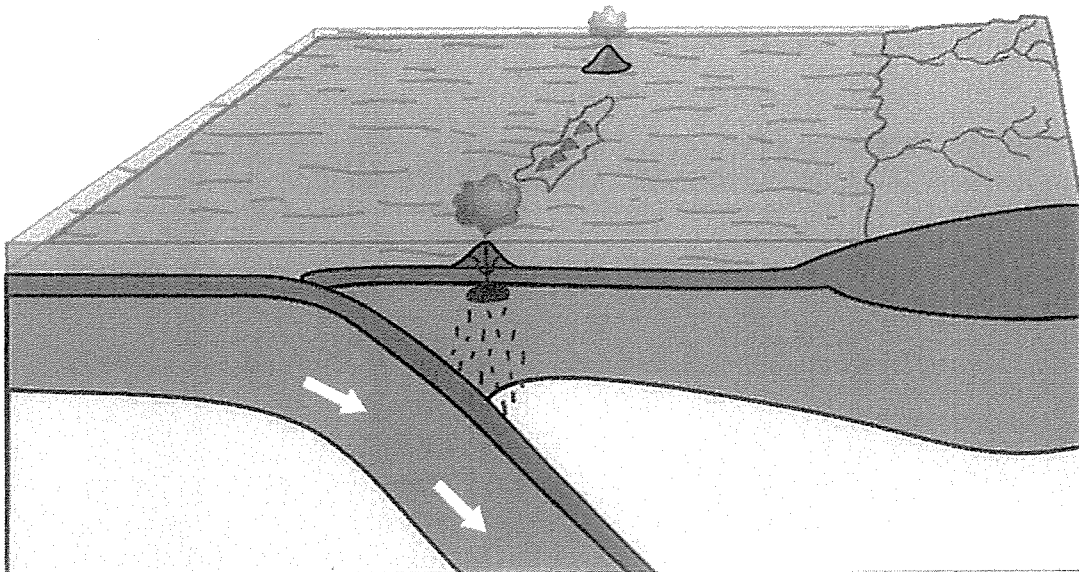
EES11-11 describes human impact on the Earth in relation to hydrological processes, geological processes and biological changes

Assessment Task: Year 11:

Depth Study - Earth and Environmental Science Skills

This task contains 8 multiple choice questions and 10 short response questions (some of them multi-part).

1. An experiment compares the number of native animals in an area without foxes to an area with foxes. What would be the independent variable in this experiment?
A) The area without foxes
B) The size of the study area
C) The number of native animals
D) The presence or absence of foxes
2. If a continent moves 6.5cm a year, how far will it move in 180 000 years?
A) 1.17 km
B) 11.7 km
C) 117 Km
D) 1170 km
3. This is a diagram of a plate boundary.



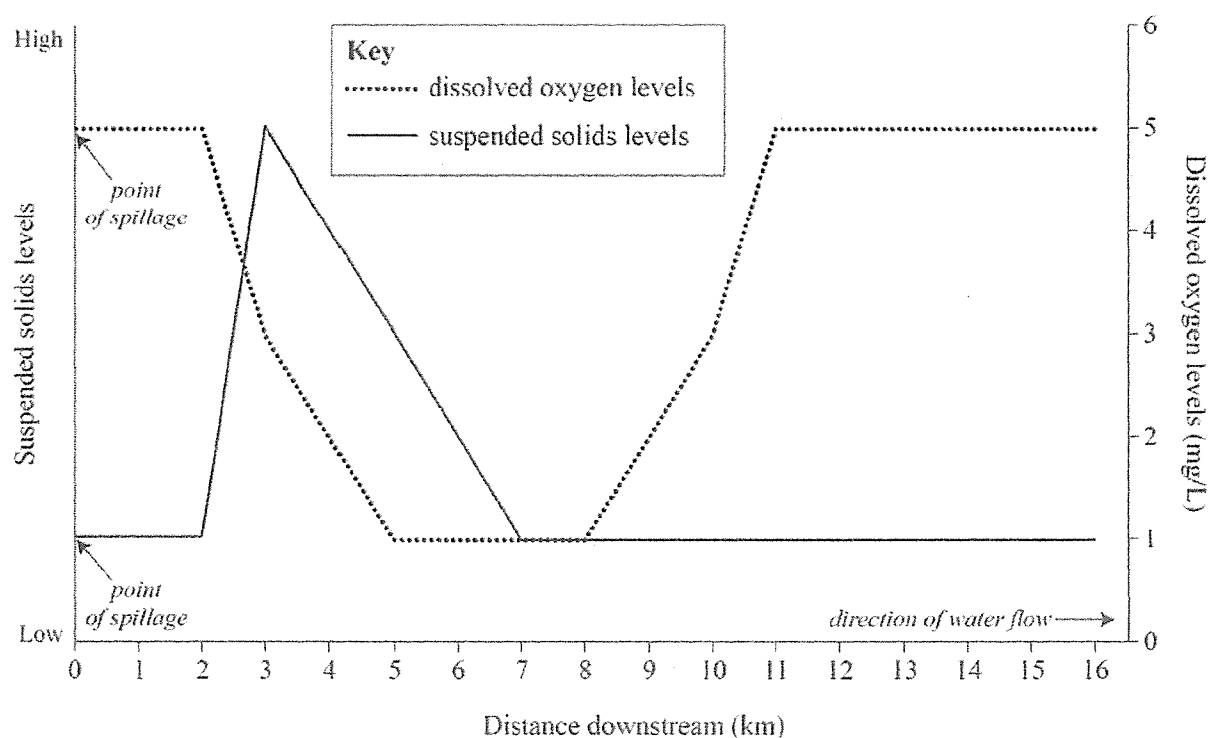
What type of plate boundary is shown?

- A) Divergent Oceanic-Oceanic
- B) Convergent Oceanic-Oceanic
- C) Convergent Continental-Oceanic
- D) Divergent Continental-Continental

4. Which row correctly lists examples of convergent and divergent plate boundaries?

	<i>Convergent plate boundaries</i>	<i>Divergent plate boundaries</i>
A.	Rift valley, trench, transform faults	Rift valley, mountain ranges, normal faults
B.	Mid-ocean ridge, folding, reverse faults	Rift valley, mountain ranges, reverse faults
C.	Mountain ranges, trench, reverse faults	Rift valley, mid-ocean ridge, normal faults
D.	Intense folding, trench, normal faults	Folding, mid-ocean ridge, transform faults

5. A council truck carrying sewage overturned and spilled its load near a wetland. Two weeks later, council workers took samples at different distances along the creek downstream from where the spill occurred. The results of the water analysis (dissolved oxygen and suspended solids) were recorded.



Identify what would be the most likely effect on the river in this scenario.

- A) acidification
- B) sedimentation
- C) eutrophication
- D) desalination

6. The table below shows the impact of the heavy metal lead (Pb) on the soil in various Sydney suburbs in 2019. The accepted safe level of soil lead concentration is 300 mg/kg, while the natural background level is 20-30 mg/kg.

Sydney suburb	Average soil lead concentration (mg/kg)	Amount of residences exceeding safe soil lead levels (%)
Leichhardt	531	64
Sydney (Inner City)	703	63
Marrickville	481	60
Strathfield	498	59
Botany	194	36
Blue Mountains	287	29
Liverpool	220	20
North Sydney	202	20

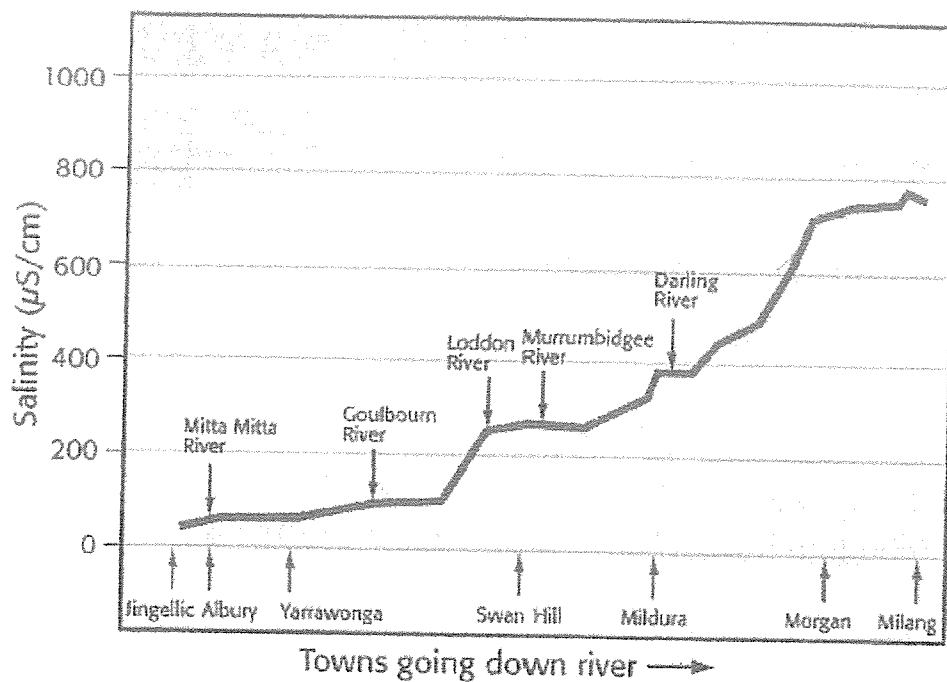
Which of the following statements can be deduced from this data?

- A) All soil samples tested had lead levels above the accepted safe level.
 - B) The majority of suburbs fall into the low-risk category for lead contamination.
 - C) Strathfield is more affected by lead contamination than Leichhardt.
 - D) All suburbs tested have soil samples with lead levels above the natural background level.
7. Horses were first introduced to Australia in 1788 and feral populations were established soon after. Which of the following is an abiotic impact of introducing horses to Australia?
- A) Increased soil erosion due to the action of hard hooves
 - B) Reduction of biodiversity across a range of ecosystems
 - C) Alteration of native plants through the creation of track networks
 - D) Dispersal of the seeds from introduced plants species in horse dung
8. Which strategy would be most effective in rehabilitating a salt-affected area?
- A) Planting native grasses
 - B) Planting deep rooted trees
 - C) Releasing water from dams
 - D) Raising groundwater levels through engineering works

Short Answers Questions 9 to 18: Marks are indicated for each question

9. During the duration of Year 11 Earth and Environmental Science, you have had to use models to show the structure and development of the Earth over its history.
Explain why models are used to study the Earth and understand tectonic processes. (3 marks)

The image below shows a salinity profile of a river. Use this graph to answer the following three (3) questions.

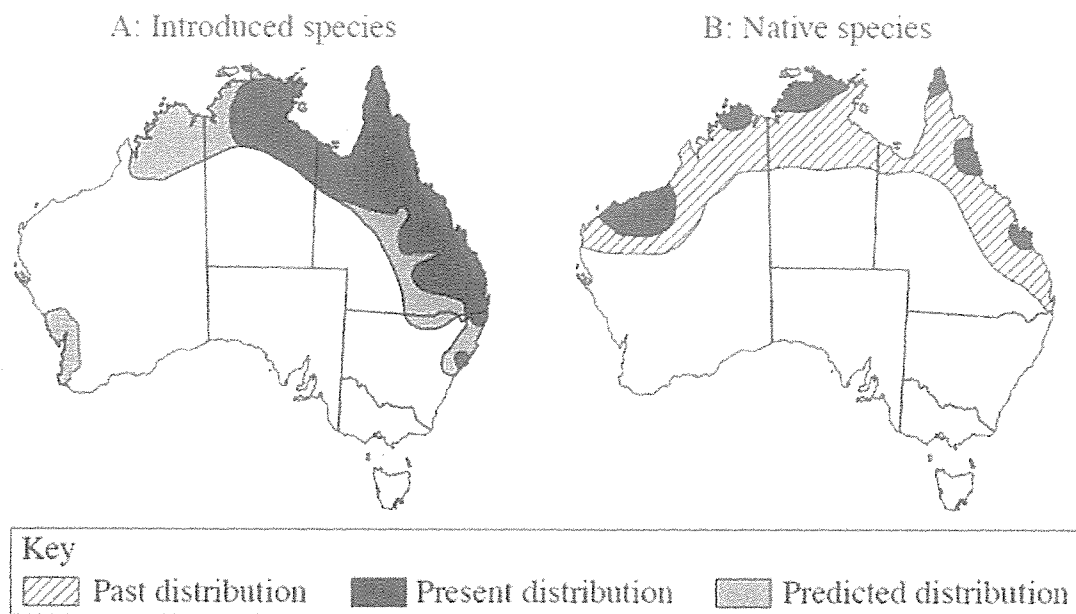


10. State the salinity at Mildura. (1 mark)

11. Identify the overall trend in the graph. (2 Marks)

12. Describe the trend you identified and propose ONE human impact that causes an increase to the salinity in the river. (3 Marks)

The maps show a distribution of introduced species and a native species. Use these to help answer the next 3 questions.

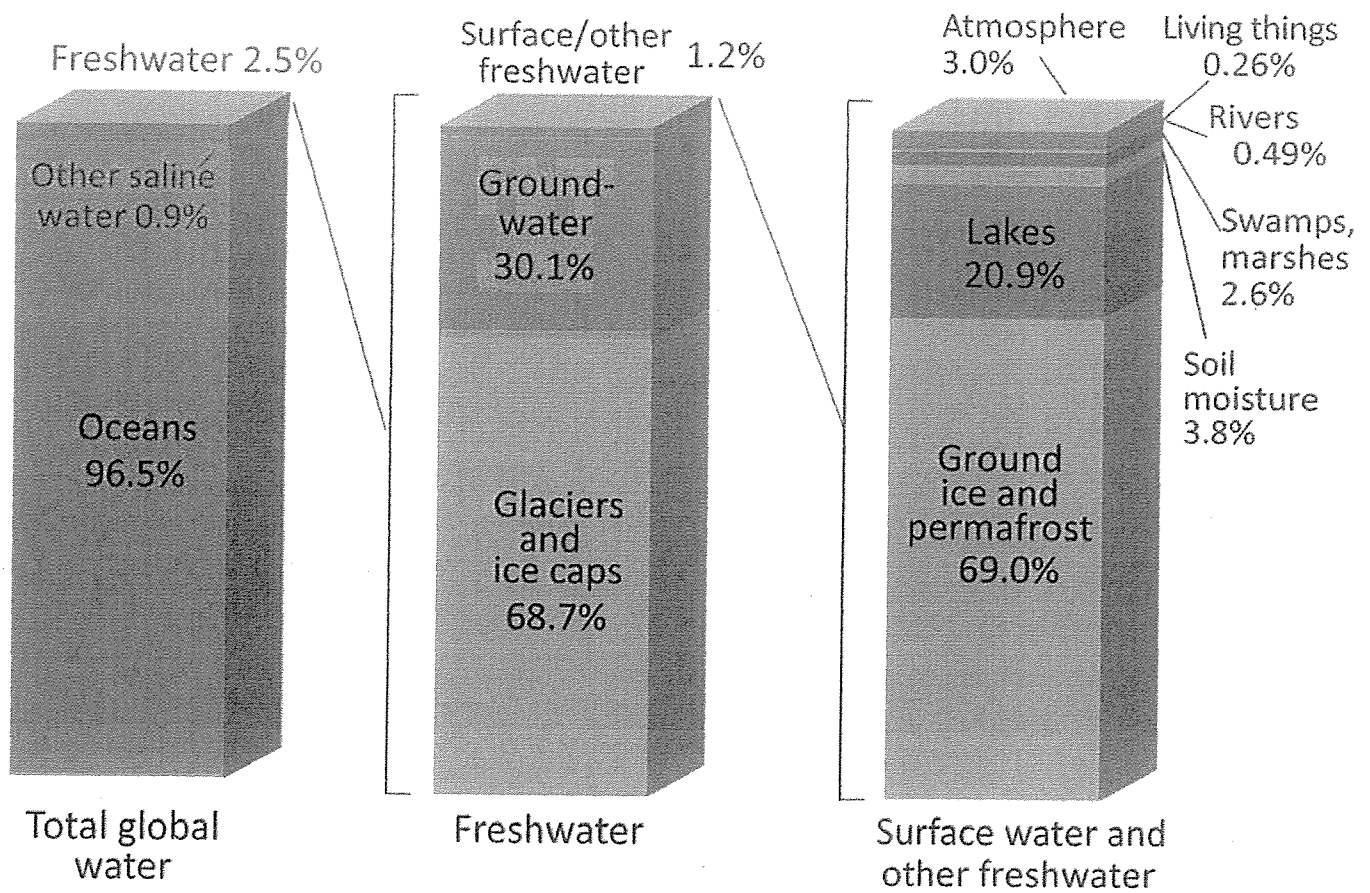


13. Using the information in the maps, compare the present-day distribution of both species. (2 Marks)

14. Account for the difference between present and predicted distributions of the introduced species. (2 Marks)

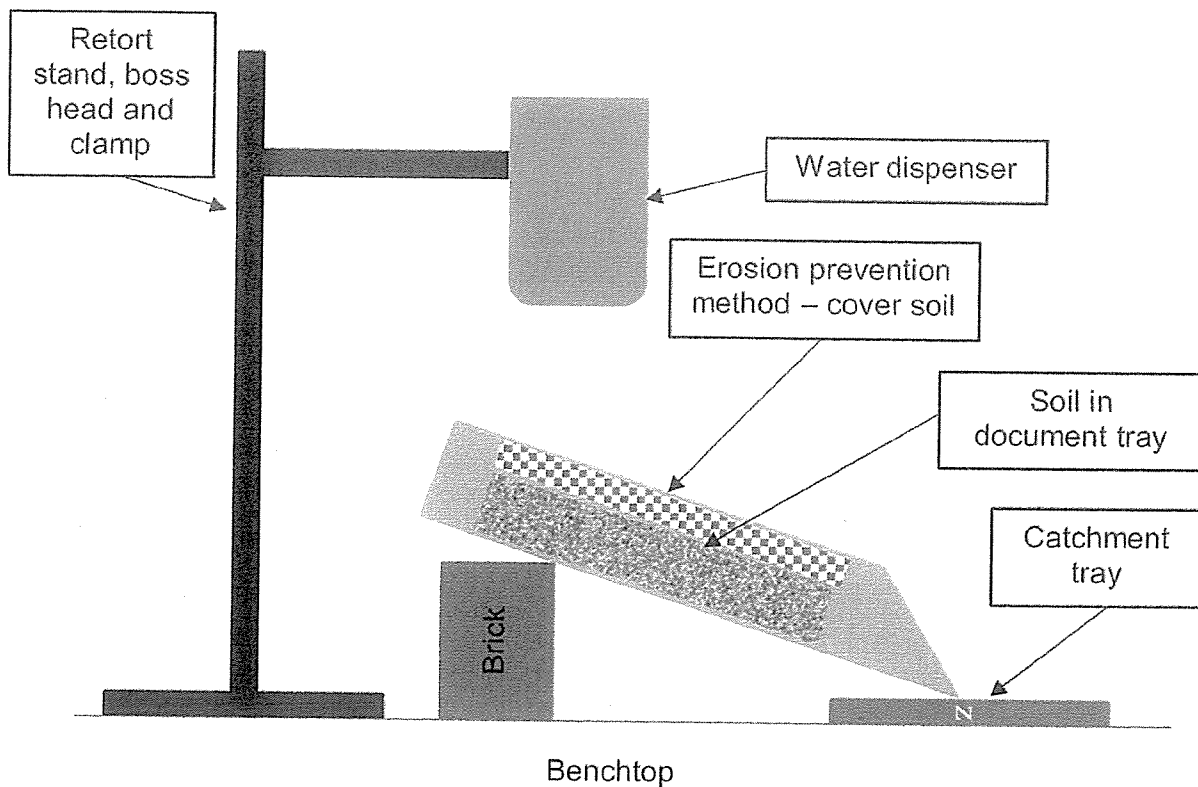
15. With 2 examples, give reasons why species have been introduced to Australia from overseas. (4 Marks)

16. The graph below represents the distribution of Earth's water.



With reference to the graph, discuss the effect of Earth's water distribution on the availability of water for plants and animals. (4 Marks)

17. The following diagram shows an experimental setup for testing methods of erosion prevention.



In this experiment water is released from the dispenser, raining over the soil and whichever erosion prevention method is being tested. Eroded soil and water runoff is collected in the catchment tray. Any water in the catchment tray is then evaporated and the remaining soil is weighed.

List which variables would be used as the independent variable, dependent variable, and controlled variables in this investigation. (3 Marks)

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18. Describe, using examples, TWO biotic effects of introduced species. (4 Marks)

Year 11 ASSESSMENT TASK – SKILLS TASK 2
Earth and Environmental Science – Marking Rubric

Outcome	Question	Assessment Criteria	Marks				
			1	2	3	4	5
EES11-2	1	<i>Identifies</i> The correct answer					
EES11-6	2	<i>Identifies</i> The correct answer					
EES11-5	3	<i>Identifies</i> The correct answer					
EES11-9	4	<i>Identifies</i> The correct answer					
EES11-7	5	<i>Identifies</i> The correct answer					
EES11-5	6	<i>Identifies</i> The correct answer					
EES11-6	7	<i>Identifies</i> The correct answer					
EES11-4	8	<i>Identifies</i> The correct answer					
EES11-1	9	<i>Explains</i> the models of tectonic plates – has 3 points					
EES11-6	10	<i>States</i> the correct salinity at Mildura					
EES11-6	11	<i>Identifies</i> the trend in the graph					
EES11-6	12	<i>Describes</i> the trend and <i>proposes</i> a valid human impact.					
EES11-7	13	<i>Compares</i> correctly the distribution of the two species					
EES11-7	14	<i>Identifies</i> correctly the differences between the two species					
EES11-6	15	<i>Identifies</i> two species and the reasons for their introduction					
EES11-8	16	<i>Discusses</i> discuss the effect of Earth's water distribution on the availability of water for plants and animals					
EES11-3	17	<i>Identifies</i> the independent variable, dependent variable, and controlled variables in this investigation					
EES11-11	18	<i>Describes</i> , using examples, TWO biotic effects of introduced species					
		Total:					

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