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| **Instrument Number 4** | **Term 2 2022** |
| **Student Name** |  | **Handout Date** (Week Beginning) | 30/05/2022 |
| **Teacher Name** |  | **Interim Check Date** | 6/06/2022 |
| **Unit Number/Name** | Unit 2 - Ecology and Earth Science | **Rough Draft Date** | 9/06/2022 |
| **Due Date** | **16/06/2022** |

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| **Assessment Technique** | Assignment |
| **Time/Length** | 3 Weeks |
| **Assessment Conditions** | Summative |
| **Seen/Unseen** | Seen |
| Materials handed out prior to assessment? | No [ ]  | Yes [x]  | **Conditions** |
| Students provided with case studies and exemplar |

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| **Choose an item.** | **Grades** |
| Science Understanding |  |
| Science Inquiry |  |
| **Result** |  |

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| **Differentiation: If assessment conditions have been adjusted details are provided below** |
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| **Acknowledgement of assessment responsibility** |  |
| I understand the consequences of plagiarism/cheating and confirm this is my own work. |
| **Student Signature:**  | **Date:** ……………………………… |

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| B:\Common\_NEW MSHS LOGO\NEW LOGO - B&W\BW-Shield Only white outline.png | **Maroochydore State High School****Standards Matrix for Year** 9 **Science Ecology and Earth Science** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Assessable Elements | A | B | C | D | E |
|  |
| Science Understanding | Describe and Explain a biological system and the abiotic and biotic interdependencies within this ecosystem | Describe a biological system and the abiotic and biotic interdependencies within this ecosystem | Identify a biological system and the abiotic and biotic interdependencies within this ecosystem | Name a biological system and the abiotic and biotic features within this ecosystem | Name a biological system Or State abiotic and biotic features of an ecosystem |
| Science Inquiry | Design and justify a research question that can be investigated | Design a research question that can be investigated | Use a research question that can be investigated | State a research question that can be investigated | State a question |
| Science Inquiry | Analyse patterns, trends and relationships in secondary data | Describe patterns, trends and relationships in secondary data | Identify patterns, trends and relationships in secondary data | State patterns, trends and relationships in secondary data | State facts about secondary data |
| Science Inquiry | Adequately communicate scientific ideas and construct and justify evidence based conclusions | Sufficiently communicate scientific ideas and construct and explain evidence based conclusions | Communicate scientific ideas and construct evidence based conclusions | Communicate ideas and state conclusions | Communicate ideas |

**Teacher feedback:**

**Task**

To present a research report on an invasive species in an ecosystem. You are to develop a research question and then select and present secondary data that answers this question. You are to analyse the data and justify how it answers the research question.

In order to complete this task, you will:

**Step 1.**

Read through the relevant article. There are 3 to pick from.

**Step 2.**

Demonstrate your understanding of your case study by creating a 100-word summary.

**Step 3.**

Select and analyse data from the case study that helps to answer your research question.

**Step 4.**

Develop a research question that relates to the case study and can be answered by available secondary data (from the case study).

**Step 5.**

Seek teacher feedback.

**Step 6.**

Write out your conclusions

**Step 7.**

Plan your introduction using the table

**Step 8.**

Write your research report (see table over page for required sections).

# ASSESSMENT SCAFFOLD

⃝ STEP ONE
Select your case study from the list (Or you may research and find your own. Teacher approval must be given before progressing):

1. What happens to Sea Lampreys if Catfish move in

<https://www.sciencejournalforkids.org/wp-content/uploads/2020/06/lamprey_article.pdf>

1. Allis Shad’s bad neighbour – The European Catfish

<https://www.sciencejournalforkids.org/wp-content/uploads/2021/01/Allis_shad_article.pdf>

1. Citric Acid to Kill Crown-of-Thorns-Starfish (COTS)

<https://www.mdpi.com/1424-2818/8/4/28/htm> (Full article, see teacher for short version)

Write your topic in the box.

⃝ STEP TWO
Summarise the case study you have selected in 100 words. Include the invasive species, the ecosystem, the problem being investigated and the results of the study.

⃝ STEP THREE

Identify the data (graphs, tables or diagrams) you will use to answer your research question. 1 or 2 sets of data is all you need. Summarise how this data helps to answer your research question

⃝ STEP FOUR
Develop a focus through a research question. In your research report, you will answer this Research Question.

* A research question is something that starts with an interrogative such as: How, Why, To what extent etc.
* A research question is never closed and this means it cannot be answered by either ‘yes’ or ‘no’.
* A research question is therefore open and needs to be explained in order to be answered.
* It needs to be specific so that you can easily find information and it is not too large to answer efficiently.

Create your Research Question in the space provided.

⃝ STEP FIVE
Have you checked that your teacher approves this research question? Have them provide feedback on your topic to help you and then sign off/date their approval.

TEACHER FEEDBACK:

⃝ STEP SIX
Draw a conclusion that answers your research question. This is known as a concluding statement in Science. It is used as your overarching argument/summary of your findings. Draw (write) your conclusion in the space below.

⃝ STEP SEVEN
Plan your introduction by completing the table. ⃝ STEP EIGHT

Write your report.

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| --- | --- |
| **Section** | **Details** |
| Title | This should be a short sentence that contains all the relevant information about your investigation |
| Introduction | * Explain and describe ecosystems in general
* Describe the specific ecosystem you are focusing on
* Describe the invasive species you are researching
* Explain the problem being investigated
 |
| Research question | * This is a question that you are answering with your data.
 |
| Data analysis | * Summarise the report that the data came from
* Present each data set
* Identify trends, patterns and relationships within the data
 |
| Interpretation | * Analyse the data to explain how the invasive species is affecting the ecosystem
* Describe 2 impacts (relationships) the species is having on the ecosystem
 |
| Conclusion | * Present the answer to your research question
* Explain and justify how the data you have presented answers the question
* Suggest improvements and extensions for further research
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