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| **untitled** | **Year 7**  **Science Inquiry – Investigating Australian Ecosystems** |

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| **Name:** | **DUE: Week 10**  **Tuesday 20th September 2022** | **Score: /32** |

**PART A – Research booklet (21 marks) – Individual**

**PART B – Poster (11 marks) – In pairs**

Poster Partner’s name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Interactions between organisms can be described in terms of food chains and food webs; human activity can affect these interactions. Your task is to investigate **ONE** Australian ecosystem listed below and create an informative poster outlining the interactions in the ecosystem. Each student will submit their own booklet but the poster should be completed in pairs.

**Australian Ecosystems:**

1. Shark Bay Seagrass Beds
2. The Great Barrier Reef
3. Gondwanan Conifer Forest
4. Daintree Rainforest
5. Monaro Tablelands
6. Mountain Ash Forest
7. Australian Tropical Savanna
8. The Great Sandy Desert
9. Ningaloo Reef
10. Mangrove Forest

**Identify your chosen ecosystem on the map below:**

Shape

Description automatically generated with medium confidence

List the Abiotic factors in your ecosystem and state the role each factor plays in the ecosystem

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| **Factor** | **Role** |
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List the Biotic factors in your ecosystem and state the role each factor plays in the ecosystem

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| **Factor** | **Role** |
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Give four examples of prey and four examples of predators in your ecosystem.

Prey:

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Predators:

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* Define the following terms in your own words.
* Give examples of each in your chosen ecosystem.

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| **Consumer** | **Definition:** |
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| **Examples:** |
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| **Producer** | **Definition:** |
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|  |
| **Examples:** |
|  |
| **Decomposer** | **Definition:** |
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|  |
| **Examples:** |
|  |
| **Herbivore** | **Definition:** |
|  |
|  |
| **Examples:** |
|  |
| **Carnivore** | **Definition:** |
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|  |
| **Examples:** |
|  |
| **Omnivore** | **Definition:** |
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| **Examples:** |
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Describe the human impacts on your chosen ecosystem using specific examples.

Use the following subheadings:

* Deforestation
* Agriculture
* Introduced Species
* Chemicals
* Urbanisation

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Draw and label an example of a food chain present in your ecosystem.

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Draw and label an example of a food web present in your ecosystem. Include the trophic level of each organism.

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Bibliography:

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**Research Rubric Mark: .......... /21**

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|  | **3** | **2** | **1** | **0** |
| **Australian ecosystem** |  |  | * Australian ecosystem identified | * Australian ecosystem not included |
| **Abiotic and Biotic factors** |  | Explanation of role of abiotic and biotic factors listed in chosen ecosystem | * Abiotic and biotic factors and abiotic factors listed but no explanation of role | * No abiotic or biotic factors listed |
| **Examples of predators and prey are included** | Includes 4 predators and 4 prey in the food web that are clearly labelled ‘predator’ and/or ‘prey’. | Includes 3 predators and 3 prey | * Includes 1-2 predators and 1-2 prey | * Predators or prey not listed |
| **A complete food chain has been included for this ecosystem** |  |  | * Accurate food chain included with arrows pointing in the correct direction | * No or inaccurate food chain present |
| **A complete food web has been included for this ecosystem** |  | * Includes an accurate drawing of a food web for this ecosystem with no errors. All arrows are pointing in the correct direction. | * Includes a food web with minimal organisms for this ecosystem or some organisms included in this ecosystem are not correct. All arrows are pointing in the correct direction. | * No food web included, or food web included does not match the correct ecosystem or has the arrows pointing in the wrong direction. |
| **Consumers, Producers and decomposers in the ecosystem** | * Consumer, producer and decomposers defined correctly with examples | * Includes two correct definitions with examples | * Includes one correct definition with examples | * Incomplete or incorrect definitions and / or examples |
| **Herbivores, omnivores, and carnivores in the ecosystem** | * Herbivores, omnivores, and carnivores have all been defined correctly with examples | * Includes two correct definitions with examples | * Includes one correct definition with examples | * Does not include any labelled herbivores, omnivores, or carnivores in the food web. |
| **Primary, secondary and tertiary order consumers in the ecosystem** | All primary, secondary and tertiary order consumers are included with no errors. | * Most primary, secondary and tertiary order consumers identified are included with minor errors. | * Some primary, secondary and tertiary order consumers but | * Consumers present but not identified as primary, secondary or tertiary order |
| **Human impacts on an ecosystem** | * Examples of human impacts on ecosystem present with detailed and accurate explanation. | * Examples of human impact on ecosystem present with brief explanation. | * Example of human impact on ecosystem present but no explanation present. | * No human impacts identified |
| **Bibliography** |  | * 5 resources included | * 3-4 resources included | * Less than 3 resources included |

**PART B: Poster (to be completed in pairs) 11 Marks**

Create a visually appealing poster displaying your knowledge of your chosen Australian ecosystem. Use the rubric on the following page.

For your chosen ecosystem you need to include each of the following:

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| Location and extent of the ecosystem | Describing the extent (area covered) and location of your ecosystem including a map |
| Biotic and Abiotic components | Detailed list/table clearly identifying the abiotic factors influencing the ecosystem and the biotic components (organisms) found in the ecosystem |
| Food web diagram | Detailed food web diagram for your ecosystem including decomposers, producers and consumers. It should include at least 10 organisms. For each organism you should include a description and at least one feature of that organism that helps it to live in your ecosystem  Arrows should indicate both what eats what and the direction of energy flow in the ecosystem |
| Food web explanation | Detailed explanation of the interactions of organisms in the food web (Who eats who and how nutrients are returned to the soil) and how energy flows through the ecosystem |
| Human effects | Describes and explains some effects that humans could or do have on this ecosystem. Include the effect that human activity may have on your chosen ecosystem (examples may include deforestation, agriculture, chemicals, fertilizers, urbanisation) |
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**Contribution to poster:**

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| --- | --- | --- |
| **Contribution** | | |
| **Name** | **% Completed** | **What I / They did on poster** |
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**Poster Rubric. Mark: .......... /11**

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|  | **3** | **2** | **1** | **0** |
| **Content accuracy** | * All elements are displayed for chosen ecosystem | * Most elements are displayed for chosen ecosystem | * Few elements are displayed for chosen ecosystem | * Inaccurate information for chosen ecosystem |
| **Quality of information** | * Descriptions are clear and concise in good detail | * Descriptions are complete, but not concise with some detail | * Descriptions are lacking detail | * Descriptions incorrect |
| **Creativity, appearance/**  **layout** |  | * Layout is visually appealing and supports overall message * Text is clear and easy to read * Headings/labels used consistently | * Layout appears cluttered or busy * Text is sometimes difficult to read * Limited use of headings/labels | * Layout is cluttered or confusing * Text is difficult to read * No use of headings / labels |
| **Terminology** |  | * Consistent use of scientific terminology | * Some use of scientific terminology | * Scientific terminology not used |
| **Spelling / Grammar** |  |  | * No common grammatical / spelling errors | * Some common grammatical errors |