

Biodiversity of Living Things
Science, Technology, Society and Environment Assignment

In this unit, we have been discussing the variety of living things in our world, classifying them and how they are interconnected and depend on each other. Below are several issues that may impact biodiversity. You may choose one or develop your own.

Your task is to prepare a persuasive letter, addressed to the appropriate government official (ie the Minister of Foreign Affairs). In your letter, you should include:

- relevant background information to the issue
- what the problem or issue you are concerned about
- how biodiversity is being threatened
- the possible outcomes if no action is taken
- possible solutions to the current situation
- your recommendations

A - Analyse some of the risks and benefits of human intervention to the biodiversity of aquatic or terrestrial ecosystems:

- Tree plantations;
- Monoculture of livestock or agricultural crops;
- Over-harvesting of wild plants for medicinal purposes;
- Using pesticides to control pests;
- Suppression of wild fires;
- Overstocking lakes

...Stocking lakes with fish provides recreation for fishing enthusiasts and increases the amount of food available for humans and other animals. However, this practice also increases the competition for food, which could threaten native species and affect the natural biodiversity of the aquatic ecosystem.

B - Analyse the impact that climate change might have on the diversity of living things:

- Rising temperatures can result in habitat loss or expansion;
- Changing rainfall levels can cause drought or flooding of habitats;
- New species may flourish while others become extinct

...Scientists believe that we are in the early stages of a human-made mass extinction partly caused by rapid climate change. Many species that cannot tolerate the change will become extinct. However, Earth's history has shown that extinction of some species creates opportunities for surviving species to adapt, evolve, and flourish.

You will be evaluated in the following three categories: Communication (24 marks), Application (32 marks) and Inquiry (24 marks) for a total of 80 marks.

*******Please hand in this sheet with your paper*******

Categories	58–59% (Level 1)	60–69% (Level 2)	70–79% (Level 3)	88–100% (Level 4)
Communication – The conveying of meaning through various forms				
	The student:			
Expression and organization of ideas and information (e.g., clear expression, logical organization) in oral, visual, and/or written forms (e.g., diagrams, models)	expresses and organizes ideas and information with limited effectiveness 0 1 2	expresses and organizes ideas and information with some effectiveness 3 4	expresses and organizes ideas and information with considerable effectiveness 5 6	expresses and organizes ideas and information with a high degree of effectiveness 7 8
Communication for different audiences (e.g., peers, adults) and purposes (e.g., to inform, to persuade) in oral, visual, and/or written forms	communicates for different audiences and purposes with limited effectiveness 0 1 2	communicates for different audiences and purposes with some effectiveness 3 4	communicates for different audiences and purposes with considerable effectiveness 5 6	communicates for different audiences and purposes with a high degree of effectiveness 7 8
Use of conventions, vocabulary, and terminology of the discipline in oral, visual, and/or written forms (e.g., symbols, formulae, scientific notation, SI units)	uses conventions, vocabulary, and terminology of the discipline with limited effectiveness 0 1 2	uses conventions, vocabulary, and terminology of the discipline with some effectiveness 3 4	uses conventions, vocabulary, and terminology of the discipline with considerable effectiveness 5 6	uses conventions, vocabulary, and terminology of the discipline with a high degree of effectiveness 7 8
Application – The use of knowledge and skills to make connections within and between various contexts				
	The student:			
Application of knowledge and skills (e.g., concepts and processes, safe use of equipment, scientific investigation skills) in familiar contexts	applies knowledge and skills in familiar contexts with limited effectiveness 0 1 2	applies knowledge and skills in familiar contexts with some effectiveness 3 4	applies knowledge and skills in familiar contexts with considerable effectiveness 5 6	applies knowledge and skills in familiar contexts with a high degree of effectiveness 7 8
Transfer of knowledge and skills (e.g., concepts and processes, safe use of equipment, scientific investigation skills) to unfamiliar contexts	transfers knowledge and skills to unfamiliar contexts with limited effectiveness 0 1 2	transfers knowledge and skills to unfamiliar contexts with some effectiveness 3 4	transfers knowledge and skills to unfamiliar contexts with considerable effectiveness 5 6	transfers knowledge and skills to unfamiliar contexts with a high degree of effectiveness 7 8
Making connections between science, technology, society, and the environment (e.g., assessing the impact of science on technology, people and other living things, and the environment)	makes connections between science, technology, society, and the environment with limited effectiveness 0 1 2	makes connections between science, technology, society, and the environment with some effectiveness 3 4	makes connections between science, technology, society, and the environment with considerable effectiveness 5 6	makes connections between science, technology, society, and the environment with a high degree of effectiveness 7 8
Proposing courses of practical action to deal with problems relating to science, technology, society, and the environment	proposes courses of practical action of limited effectiveness 0 1 2	proposes courses of practical action of some effectiveness 3 4	proposes courses of practical action of considerable effectiveness 5 6	proposes highly effective courses of practical action 7 8
Thinking and Investigation – The use of critical and creative thinking skills and inquiry, research, and problem-solving skills and/or processes				
	The student:			
Use of initiating and planning skills and strategies (e.g., formulating questions, identifying the problem, developing hypotheses, selecting strategies and resources, developing plans)	uses initiating and planning skills and strategies with limited effectiveness 0 1 2	uses initiating and planning skills and strategies with some effectiveness 3 4	uses initiating and planning skills and strategies with considerable effectiveness 5 6	uses initiating and planning skills and strategies with a high degree of effectiveness 7 8
Use of processing skills and strategies (e.g., performing and recording, gathering evidence and data, observing, manipulating materials and using equipment safely, solving equations, proving)	uses processing skills and strategies with limited effectiveness 0 1 2	uses processing skills and strategies with some effectiveness 3 4	uses processing skills and strategies with considerable effectiveness 5 6	uses processing skills and strategies with a high degree of effectiveness 7 8
Use of critical/creative thinking processes, skills, and strategies (e.g., analysing, interpreting, problem solving, evaluating, forming and justifying conclusions on the basis of evidence)	uses critical/creative thinking processes, skills, and strategies with limited effectiveness 0 1 2	uses critical/creative thinking processes, skills, and strategies with some effectiveness 3 4	uses critical/creative thinking processes, skills, and strategies with considerable effectiveness 5 6	uses critical/creative thinking processes, skills, and strategies with a high degree of effectiveness 7 8

<p>Communication /24</p> <p><u>Comments</u></p>
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<p>Application /32</p> <p><u>Comments</u></p>
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<p>Inquiry /24</p> <p><u>Comments</u></p>
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Total /80