

# Science 10

## Substantial Assignment

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Assignment Expectations:

- When answering the questions in this assignment, be sure to answer in full sentences. A good idea is to rephrasing the question as the opening sentence to your answer.
- Some of the questions have multiple parts, please be sure to answer all them.
- Some of the questions are opinion based. When answering such questions be sure to support your opinion with what you have learned. If you do outside research to support your answer please be sure to include the references.

1. Read Issues21 pages 8-9. What other actions or events have helped or hurt biodiversity? List as many as you can think of. Feel free to use external resources.

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2. Read Issues21 pages 10-11. In one sentence define each of the following.
- a. Ecosystem Diversity:

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- b. Species Diversity:

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- c. Genetic Diversity:

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3. Some scientists believe genetic diversity is as important as species diversity to the health of an ecosystem. Why do you think that could be?

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**FYI**

Biodiversity in our Lives...When we go to the pharmacy to have a prescription filled, few of us think about the connection between our medicine and biodiversity. Yet many of today's medicines have been developed from plants found around the world. For instance, the active ingredient in aspirin was first discovered in the white willow.<sup>1</sup>

4. What role do you think beavers have in the biodiversity of an ecosystem?

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5. Beavers are considered a keystone species. Using Google to define **keystone species**.

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6. Read Issues21 pages 12-13. What happens to an ecosystem when a keystone species is lost?

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7. What threats to biodiversity do you see where you live? List as many as you can think of. You may use external resources.

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8. Read Issues21 pages 14-15. The US Department of Agriculture is planning on dropping dead mice laced with poison in the forests of Guam. They are hoping to kill off all the brown tree snakes. What possible problems might arise from this action?

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9. Read Issues21 pages 18-19. Do you think it's important to save endangered species? Why or why not?

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10. Read Issues21 pages 20-21. What place does nature have in your life?

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11. What goods and services from nature do you use? How would your life be different without these goods and services?

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12. Read Issues21 pages 22. If we have the technology to bring species back from extinction, we might stop working to prevent extinctions in the first place. Do you agree or disagree with this statement?

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**FYI**

If we fail to recognize the link between biodiversity loss and human well-being, future generations will face significant ecological, economic, social and cultural costs. Degraded forest, agricultural and aquatic ecosystems are less productive and require greater inputs if they are to continue to support the communities that depend on them. It has recently been coast ground fisheries is several billion dollars. Soil erosion has cost agriculture hundreds of millions of dollars. Rehabilitation programs currently being pursued in the St. Lawrence River, the great Lakes and the Fraser River Basin are also costing hundreds of millions of dollars.

Hopes for future prosperity require that our actions and decisions reflect the value of biodiversity. Lessons from our history illustrate the importance of conserving biodiversity and using our biological resources in a sustainable manner. Our production of wheat has benefited greatly from selectively breeding domesticated wheat with genetic material from wild relatives found in other parts of the world. If these relatives had been lost, wheat production would not have reached its current state. If we fail to conserve biodiversity, we risk losing genetic material that could be used to enhance agricultural productivity further. We risk losing opportunities to develop new drugs and industrial products. In short, we risk losing opportunities to improve the quality of our lives. These costs can be avoided, however, if we recognize that preventive action and more careful management of the Earth's resources are more cost effective in the long-term than relying on programs to tackle problems once the damage has been done.

Reference

1. Canadian Biodiversity Strategy Canada's Response to the Convention on Biological Diversity 1995 [http://biodivcanada.ca/default.asp?lang=En&n+560ED58E-1]

13. Read Issues21 pages 24-25. Where would you like to travel? What impact would your visit to this place have on the environment?

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14. Read Issues21 pages 26-27. Which of these three actions do you think is the most effective at solving environmental problems? What other action might also be effective?

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15. Search on a web browser such as Google 'Standing Rock protest'. Sift through the many articles that show up. This assignment is partly about finding a reliable Internet resource, be sure the article you choose is from a reliable source such as a reputable news organization. You may need to review several articles before finding all of the information (keep track of your resources).

a. Where is Standing Rock? \_\_\_\_\_

b. When was the standing rock protest? \_\_\_\_\_

c. What is the issue that the people were protesting?

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d. What happened to the people who were protesting?

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e. If you would like to find out more about this protest, a documentary film was made (partly using drone footage of the protest) and is available on Netflix. The film is titled 'AWAKE, A Dream from Standing Rock'.

f. Resources: provide a complete list of resources you used to find this information. Attach it to your assignment

16. Read Issues21 pages 28-29. How do our actions impact the environment? What are some things you could do in your everyday life to help the environment around you? How could you get others involved?

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17. On Issues21 page 29 you will read about the Idle No More campaign. If you are interested in finding out more about the campaign check out the Idle No More website [<http://www.idlenomore.ca>].

18. How are Aboriginal rights and protecting the environment connected?

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19. Read Issues21 pages 30-31. Why is it important to identify new species or be able to determine the difference between similar species?

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20. Read Issues21 pages 32-33. Why is it important to protect plants and animals that are in danger of becoming extinct?

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21. Do you think spending money on protecting only biodiversity hotspots is a good way of protecting the world's biodiversity? Why or why not? Who should pay to preserve species?

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22. Do you think the IUCN's Red List is an effective way to look at animals at risk? Why or why not?

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23. It is important to ask questions, curiosity drives knowledge. At this point in learning about Biodiversity, what questions do you still have? List at least three questions.

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