

Biodiversity 3: Biodiversity Newsletter

Middle School Biodiversity Curriculum

Class Time Required:

2-3 class periods (50-65 minutes each)

Extension (30-45 minutes)

Materials Needed:

- Engagement: Newspaper or Short Magazine Articles
- Investigation and Explanation: Worksheet 1, "Biodiversity 3: Biodiversity Newsletter", Resource Materials (books, textbooks, internet)
- Extension: Attachment 1, "Biodiversity 3: Biodiversity Newsletter", Resource Materials (books, textbooks, internet)

Teacher Preparation: 30-60 minutes to read through activity, collect materials, and print Worksheet

Student Knowledge: some prior knowledge about threats to biodiversity (see "Biodiversity 1: Threats to Biodiversity")

Vocabulary: biodiversity, ecosystem, organism

Next Generation Science Standards:**• MS-LS2-1.**

Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem

• MS-LS2-4.

Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

Overview:

Students are given the opportunity to research a topic of their choice related to threats that exist to the biodiversity of our planet. Biodiversity refers to the variety of living organisms, as well as ecosystem diversity, species' genetic diversity, and frequency of occurrence. The quality of human life is directly related to the quality of life for all organisms. Preserving biodiversity is key to our well-being. Government agencies such as the National Park Service are concerned with conservation of habitats that are necessary to protect different organisms

(<http://www.nature.nps.gov/biology/biodiversity>). In this activity students will explore a threat to biodiversity in depth.

Background Information:

“Almost all current biodiversity analysts agree that the extinction of species is proceeding at one hundred to 10,000 times the pre-human rate, while the rate of origin of new species is decreasing.” (“Biologist” 2001)

The threats to biodiversity on Earth cannot be ignored without consequences. Threats to biodiversity can be explored at three different levels: (1) ecosystem diversity refers to the diversity of habitats: an ecosystem is a community of living organisms and nonliving components living and interacting together; (2) species diversity refers to the many different species of organisms in the world; currently scientists have classified 1.5 million species (Giller, 2014); (3) genetic diversity refers to the different forms of genetic information carried within a particular species to keep maintain viability. There are threats to biodiversity at all levels including habitat destruction, invasive species, pollution, hunting, and climate change. (Miller, 2010).

Focus Questions:

What are different threats to biodiversity in the world?

What is being done to conserve or restore biodiversity to natural areas?

Where are the loss of biodiversity hotspots in the world?

**Learning Target:**

I can describe a threat to biodiversity and explain how humans are trying to minimize the impact.

Engagement:

(10-15 minutes)

Instructor will find recent science-related articles from newspapers, magazines, or using online resources. The instructor will want to find articles that are not too long so that they can be projected or read to the class. After reading the article, the instructor will ask students to explain what are the 5 W's (who, what, when, where, and why) in the article.

Investigation:

(2-3 class periods)

1. Students will create a biodiversity newsletter focusing on the essential question of “What threats exist to the biodiversity of our planet?” Instructor will hand out the Worksheet 1--Biodiversity Newsletter to use as an outline. Included on the worksheet are boxes for students to take notes and help organize their thoughts and research on their particular topic. Students will need to pick a biodiversity threat to research and record vocabulary words that are unfamiliar to them. Further research will fill in the “who, what, when, where, and why” of the topic they are researching.

2. After research is completed, students will write an article for the newsletter to share the information that they have gathered about their topic. Students should have a finished typed version ready to copy and paste into a newsletter format.

Explanation:

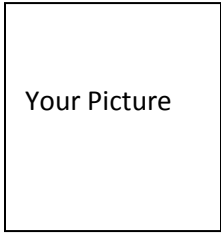
(15-20 minutes)

To compile into a newsletter, articles can be grouped by topic or the newsletter can be devoted to just one topic (for example: habitat destruction). An alternative is to have groups of students compile their articles together. Microsoft Word has many templates for newsletters. Students will need to copy and paste their articles into a template and insert a title for their article.

Extension:

(30-45 minutes)

It takes a diverse group of community members and professionals to make a difference in protecting Earth's biodiversity. [Attachment 1: Biodiversity Newsletter](#), provides a list of careers to research (the instructor may be able to suggest many more). Students will pick a career that they would be interested in pursuing and create a "driver's license" of themselves with information about their career choice. Students could use the actual license of their state or a generic Science Driver's License. The instructor should encourage students to add additional information or graphics to make the driver license more interesting.

SCIENCE Driver License	
 Your Picture	Name
	Occupation
	Job Description
	Education Needed or Training

References:

"Biologist Edward O. Wilson—The Bard of Biodiversity." *Discover Magazine*. Ed. Josie Glausiusz. Kalmbach Publishing Company, 1 Dec. 2001. Web. 26 Aug. 2014. <<http://discovermagazine.com/2001/dec/breakdialogue>>

Giller, Geoffrey. "Are We Any Closer to Knowing How Many Species There Are on Earth?" *Scientific American Global RSS*. Scientific American, 8 Apr. 2014. Web. 16 Aug. 2014. <<http://www.scientificamerican.com/article/are-we-any-closer-to-knowing-how-many-species-there-are-on-earth>>

Miller, Kenneth R., and Joseph S. Levine. *Biology--Miller & Levine*. Boston, MA: Pearson, 2010. Print.

Tschakert, Petra. "Threats to Biodiversity." *Welcome!* Pennsylvania State University, 1 Jan. 2014. Web. 23 Aug. 2014. <<https://www.e-education.psu.edu/geog030/node/394>>