

HU GK-12 Activity

TITLE: Environmental Stressors

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DCPS STANDARDS: E.8.5

GOALS:

1. Scholars will be able to identify environmental stressors and explain how each stresses the environment.
2. Scholars will be able to compare and contrast the beneficial and harmful effects of at least two different environmental stressors.
3. Scholars will be able to determine secondary effects of environmental stressors on other biotic and abiotic ecosystem components.

OBJECTIVES:

1. Given a presentation on various forms of environmental stressors, scholars will identify natural and artificial stressors and describe how these stressors affect the environment.

PREREQUISITE KNOWLEDGE:

Background

The term environment may be defined as everything that surrounds a particular organism. The environment is an important component of the ecosystem. Changes in the environment may adversely affect life forms inhabiting a particular area. For this reason, understanding various forms of environmental stressors becomes important in maintaining a hospitable environment in which organisms thrive. In general language the term stress refers to an applied force or system of forces that tends to strain or deform a body. Thus, because everything in our universe is composed of matter, everything is capable of being under stress. An environmental stressor is any event or situation that requires a change in behavior of the environment. There are many types of environmental stressors and all are not negative. Environmental stressors like volcanoes are initially bad for the environment but later on provide essential elements that make soils rich in nutrients. There is an immense difference between an environmental stressor and a pollutant. All environmental stressor may not be classified as pollutants but all pollutants may be classified as environmental stressors. A pollutant is defined as a harmful material that enters the environment. Pollutants are often associated with human behavior and are not thought to be natural. Some pollutants, however, are from natural causes. In this activity we will view the difference between the many forms of environmental stressors, including natural and artificial pollutants.

ESSENTIAL QUESTIONS:

1. What is the difference between an artificial and natural environmental stressor?
2. Are all environmental stressors bad for the ecosystem?

LABORATORY MATERIALS:

Projector, blank sheet of paper (for use as data sheet), photographs of natural and artificial forms environmental stressors.

DIFFERENTIATING INSTRUCTION:

There is no need to differentiate the instruction for this activity.

RATIONALE:

This activity is designed to demonstrate the effects of various forms environmental stressors on humans, water quality, wildlife, and other components of the environment.

RESEARCH ACTIVITY:

Lecture preparation:

1. Download images of environmental stressors from www.images.google.com
2. Present the environmental stressors in categories of natural and artificial.
3. Provide examples of each stressor with supporting photographs of familiar natural habitats
4. Display secondary effects of environmental stressors by showing pictures of repercussions of each stressor.

Student's responsibility:

1. Take notes and classify each type of environmental stressor.

EVALUATION AND ASSESMENT:

1. Scholars will select at least two environmental stressors and use Venn diagrams to compare and contrast the beneficial and harmful effects of these stressors.
2. Scholars will describe, in two sentences, two secondary effects of each environmental stressor on other biotic ecosystem components.