

Grades: 7<sup>th</sup> + 8<sup>th</sup>  
Grade

Subject: Mathematics

Teacher: Ms. Williams

Date: January 8, 2015

## Peace Corps

### Paul D. Coverdell World Wise Schools

Educators | Lesson Plans

## Investigating Environmental Sustainability

### Teaching Suggestions

Subject(s): **Language Arts & Literature, Social Studies & Geography, Service Learning, Science, Mathematics**

Grade Level(s): **6–8, 9–12**

Related Publication: **Global Issues | Environmental Sustainability**

### Overview

These teaching suggestions are designed to support interdisciplinary exploration of domestic and global environmental issues. They may be used on their own or to extend students' learning from the WebQuest Promoting Environmental Sustainability.

### Background Information

More about how Peace Corps Volunteers address global issues:

- [Peace Corps - What do Volunteers do? - Environment](#)

More about global environmental issues:

- [United Nations Environment Programme](#)
- [United States Agency for International Development \(USAID\) - Environment](#)

More about environmental issues in the United States:

- [United States Environmental Protection Agency \(EPA\)](#)
- [United States Department of Energy \(DOE\)](#)

### Featured Reading(s)

- [Global Issues | Environmental Sustainability](#)

### Procedures

**Science:** Play the [Peace Corps Challenge](#) online game and investigate pollution issues in the waterways of the fictional village of Wanzuzu. How can the problems they are facing be prevented? Then research pollution issues affecting a body of water in your community. What kinds of pollutants are present and how did they get there? What kinds of pollution prevention strategies could help?

**Social Studies:** View the video [Dive into Ecotourism](#), discussing a Peace Corps Volunteer's work with a community in the Dominican Republic. Research ecotourism as an approach to promoting environmental and economic sustainability. What are some of the benefits and challenges for host communities?

**Language Arts:** Read the story [Reduce, Reuse, Recycle](#) by Peace Corps Volunteer Nina Porzucki, who served in Romania. How does the author's perspective on waste change through her experiences in another culture? Using the story as a model, write about an experience you had that changed your perspective about an issue of environmental concern.

**Geography:** Look at the United Nations' [map of solar power potential](#) and describe the geographic trends you notice. Which regions of the world would be most likely to have success in producing electricity from solar energy? To what do you attribute these trends?

**Service Learning:** Review the environmentally-focused [project ideas](#) listed in World Wise Schools' service-learning module. After assessing the environmental issues of a given community, decide on a way you could address a key need through direct service or advocacy.

**Math:** View the slide show [Sustained by the Sun](#), describing how a community in Costa Rica constructed solar panels to power their biological reserve. Consider the costs and financial benefits associated with renewable energy. Find out how many kilowatt hours (kWh) of electricity your home or school uses each month. Research how many solar panels you would need to produce this much energy, the costs of installing, and when you could expect to see financial benefits.

**Foreign Language:** Read or listen the following stories in Spanish, describing how Peace Corps Volunteers worked with Guatemalan communities to reuse "waste" materials - plastic bottles and trash - as innovative building materials: [Construyendo una Escuela a Base de Botellas](#), [Un Esfuerzo de la Comunidad](#), or [Construyendo un Futuro Mejor](#). Look up any vocabulary that is unfamiliar and describe the similarities and differences between the communities' approaches.

## Framework and Standards

### Enduring Understandings

- All human communities and living things depend on the wellbeing of the natural environment.
- Human activities can have positive and negative impacts on the environment.
- Ensuring environmental sustainability must be a collaborative global effort.

### Essential Questions

- How do human activities affect the environment, and how does environmental change affect human activities?
- What are the world's most pressing environmental issues and why?
- How can you help address environmental concerns locally and globally?

### Standards

#### National Science Education Standards

- Content Standard F: Science in Personal and Social Perspectives
  - Environmental quality

#### National Curriculum Standards for Social Studies

- Thematic Strand III: People, Places, and Environments
  - Evaluate the consequences of human actions in environmental terms

#### Common Core State Standards for English Language Arts

- Reading: Informational Text
  - Craft and Structure: Determine an author's point of view or purpose in a text
- Writing
  - Text Types and Purposes: Write informative/explanatory texts to examine a topic and convey ideas

#### U.S. National Geography Standards

- Essential Element V: Environment and Society
  - How physical systems affect human systems

#### Common Core State Standards for Mathematics

- Expressions and Equations
- Analyze and solve linear equations and pairs of simultaneous linear equations

### **National Standards for Foreign Language Learning**

- Communication
  - **Standard 1.2:** Understand and interpret written and spoken language