

# Human and Environment Interaction in Latin America



Suggested Level: High School

Center for Latin American Studies  
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# UNIT: Environmental History

## Arizona State Standards

### SECONDARY: Proficiency (grades 9-12)

#### ***A) Social Studies***

- 1 **History:** 1SS-P1: PO1, PO2  
1SS-P2: PO1, PO2, PO3, PO4  
1SS-P3: PO1, PO2, PO3
- 2 **Geography:** 3SS-P1: PO1, PO2  
3SS-P4: PO1, PO2, PO3, PO4  
3SS-P5: PO2, PO3
3. **Economics:** 4SS-P2: PO1, PO3

#### ***B) Writing and Literature***

**Reading:** R-P1: PO1, PO2, PO3, PO4, PO5  
R-P4: PO1, PO2, PO3

**Writing:** W-P1: PO1, PO2, PO3, PO4, PO5  
W-P3: PO1, PO2, PO3, PO4  
W-PO4: PO1, PO2, PO3, PO4

**Listening and Speaking:** all benchmarks apply.

**Viewing and Presenting:** all benchmarks apply.

We include the Standards for Language Arts because of the crossdisciplinary opportunities in the coverage of this topic. Other cross-disciplinary suggestions include:

**Art:** How are natural disasters portrayed through art? Why do artists choose this topic as subject for their art? how would you represent these phenomena or the response to these phenomena through visual work? Students choose to represent any of the suggested natural disasters through art.

**Natural Sciences:** How do we explain volcanic eruptions, earth tremors, earthquakes and hurricanes? How do ecosystems respond to areas where these natural disasters are common? Discuss the human, animal and plant adaptations to these conditions.

**Combining art and science:** Students can replicate a volcano and make it erupt and study the chemical reactions taking place during the process.

**Foreign Language (Spanish):** Students analyze articles in the foreign language and discuss their reactions in oral or written form. Researching and discussing environmental disasters involves students with the language and provides valuable material for cultural discussion.

## ***Theme: Human and Environment Interaction***

**Goals & Objectives:** Use environmental history to illustrate how environment influences humans and humans transform the environment.

**Length of Lesson:** 3 class periods of 55 minutes each

**Materials & Preparation:** Handout 1.1

### **Vocabulary:**

***Plate Tectonics:*** theory that Earth's crust is divided into large solid plates that move relative to each other and cause mountain building, volcanic, and earthquake activity when they separate or meet

***Vulnerability:*** susceptibility to attack or injury

***Infrastructure:*** The basic facilities, services, and installations needed for the functioning of a community or society, such as transportation and communications systems, water and power lines, and public institutions including schools, post offices, and prisons

Use case studies of natural disasters in Latin America to illustrate human/environment interaction. The following natural disasters attracted a great deal of attention and would be accessible for students to research:

- Hurricane Mitch
- Mexico City Earthquake (1985)
- Monserrat Volcanic Eruption in the Caribbean (also: Soufriere Hills)

1. Students research these natural disasters. Include newspaper articles, websites and other resources. Here are some suggested web resources:

### **Hurricane Mitch Web Resources**

✓ National Climatic Data Center Website

<http://www.ncdc.noaa.gov/oa/reports/mitch/mitch.html>

✓ USA Today Website – contains a wealth of links and good information.

<http://www.usatoday.com/weather/hurricane/1998/wmitch.htm>

✓ LANIC Website – lots of good links to newspapers, regional and national news, and disaster relief agencies

<http://lanic.utexas.edu/info/newsroom/mitch.html>

✓ Hurricane Mitch news reports and photos

<http://www.honduras.com/weather/>

✓ The following are links to radio and video reports on Hurricane Mitch. They can be viewed with Real Player.

[pnm://rm.bbc.net.uk/news/olmedia/205000/audio/\\_207280\\_greste.rm](pnm://rm.bbc.net.uk/news/olmedia/205000/audio/_207280_greste.rm)

[pnm://rm.bbc.net.uk/news/olmedia/210000/video/\\_211210\\_here\\_and\\_now\\_vi.rm](pnm://rm.bbc.net.uk/news/olmedia/210000/video/_211210_here_and_now_vi.rm)

[pnm://audio.npr.org/me/19981103.me.ra?start="00:34:40.100"&end="00:38:41.400](http://pnm://audio.npr.org/me/19981103.me.ra?start=)

[pnm://audio.npr.org/totn/19981104.totn.ra?start="00:48:29.840"&end="01:36:38.280](http://pnm://audio.npr.org/totn/19981104.totn.ra?start=)

[pnm://audio.npr.org/me/19981105.me.ra?start="00:08:17.300"&end="00:12:35.640](http://pnm://audio.npr.org/me/19981105.me.ra?start=)

[pnm://audio.npr.org/watc/19990214.watc.ra](http://pnm://audio.npr.org/watc/19990214.watc.ra)

[pnm://rm.bbc.net.uk/news/olmedia/205000/audio/\\_205517\\_gresteradio.rm](http://pnm://rm.bbc.net.uk/news/olmedia/205000/audio/_205517_gresteradio.rm)

### **Mexico City Earthquake of 1985**

✓ General Information and graphics from Arizona Geosciences Website

<http://www.geo.arizona.edu/K-12/azpepp/education/history/mexico/>

✓ USGS references to earthquake resources

<http://geology.er.usgs.gov/eastern/earthq.html>

✓ Natural Disaster Reference Database

<http://ndrd.gsfc.nasa.gov/>

### **Soufriere Hills, Monserrat Volcano Eruption**

✓ Volcano World website

<http://volcano.und.edu/vw.html>

✓ MTU's website – contains many links to other volcano resources

<http://www.geo.mtu.edu/volcanoes/west.indies/soufriere/>

✓ USGS website - lots of good info on volcanoes in general and Monserrat, good links

<http://vulcan.wr.usgs.gov/Volcanoes/WestIndies/Montserrat/framework.html>

2. Students share the information about their respective natural disasters. Students identify on a map the area that the natural disaster affected.
3. Students discuss their findings. Here are some questions to get discussion started:
  - What is special about the geology of Latin America? How do plate tectonics work? Show the map of plate tectonics (Handout 1.1). What are the causes of earthquakes and volcanoes in Latin America?
  - Who do you think would receive help mostly quickly after a natural disaster occurred? Why?
  - What is vulnerability?
  - How were the people in the natural disaster you researched vulnerable? (this could be due to poverty, social inequality, poor housing, population pressure, rapid urbanization, unequal access to resources)
  - Why/how were these natural hazards more damaging than they may have been in a developed country? Are there differences in how natural hazard are experienced in developed versus underdeveloped countries?
  - What effects did these natural disasters have on the economy of the country? Agriculture? Environment? Politics? Culture?
  - In what ways have humans adapted to their hazard-prone environment? (i.e. urban housing planning, urban infrastructure, disaster response mechanisms, agricultural response)

4. Students compare and contrast the ways in which a natural disaster affects people due to their place in society, occupation, place of residence, sex, ethnicity, etc. How would a natural disaster affect people living in a big city versus the countryside? How would it affect a wealthy person versus a poor person?
5. Students write a newspaper article about a natural disaster. They will report on the events and effects of a hurricane, earthquake, volcano, drought or flood from a particular perspective. In their newspaper article, the students should write about the events of the disaster from their unique viewpoint and should include what economic, cultural, social, political and agricultural effects the natural disaster has had on the people and landscape from where they are reporting.
  - ✓ Examples of a perspective could include:
    - Reporter from... rural Honduras, Urban Honduras (Tegucigalpa), Mexico City, Rural Mexico, U.S. reporter from Miami, reporter from a disaster relief agency in the U.S., reporter from the island of Monserrat, etc.

### **Extensions**

1. Students interview someone who has experienced a natural disaster.
2. Students write a fictional story about a natural disaster.
3. Students research natural disasters that have affected their home town.



