Global Environmental Problems, the ISA way

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Unit Title: Global Environmental Problems, the ISA way

Grade Level: 9th

Subject/Topic Area(s): Interdisciplinary—World Geography, Biology, English, Technology, Math (minimally)

Designed By: Mitzi Moore and Kathleen Pedder, based on The Choices Program (of Watson Institute for International Studies at Brown University) and utilizing curriculum resources of Population Connection

Time Frame: one month

School District: North East Independent School District

School: International School of the Americas

School Address and Phone: 1400 Jackson Keller Road, San Antonio, TX, 78213, 210-442-0404

**Brief Summary of Unit** (Including curricular context and unit goals):

This unit asks freshmen to verbally advocate for an assigned policy option from an assigned roll, during a simulation in which they work in teams to influence a mock Presidential Advisory Panel on Environmental Issues. Learning the content (global environmental problems), researching, and collaborating to establish a position will take one month and be taught primarily through Biology and World Geography classes, with support from Math and Multimedia. They will also read *Ishmael* in English class, and extend their understanding of sustainability issues by taking a week-long field trip immediately following the simulation.
Global Environmental Problems—
an interdisciplinary project for the 9th grade

By Kathleen Pedder and Mitzi Moore, 2011

### Stage 1 – Desired Results

#### Established Goals

**Science:**
- **Biology TEKS 12 C, D, E, F**
  - Science: TEKS 12 C, D, E, F
  - describes how environmental change can impact ecosystem stability.
- **ISA Science Literacy (all)**
  - Explains how an issue is part of a complex global system.

**Social Studies:**
- **World Geography TEKS 8**
  - Social Studies: World Geography TEKS 8
  - compare ways that humans depend on, adapt to, and modify the physical environment using local, state, national, and international human activities in a variety of cultural and technological contexts
- **ISA Social Studies (all)**
  - Develops an argument based on compelling evidence that considers multiple perspectives.

**English:**
- **ISA ELA -- Analysis & Inquiry, Reflection & Advocacy**
  - ISA ELA: Analysis & Inquiry, Reflection & Advocacy
  - Analyzes and evaluates the ideas and arguments presented in print, visual, verbal, and multi-media texts.
  - Uses language and multi-media to present a clear and compelling position of advocacy.

**Math:**
- **ISA Math -- Connections**
  - ISA Math: Connections
  - Uses data generated by mathematical processes or models to make decisions

**Other:**
- **ISA Global Leadership**
  - ISA Global Leadership: Recognizes that resources are limited, consider environmental, economic and social theories of resource use and conservation, and articulate points of view on resource usage.
- **ISA Technology -- Research and Information Fluency**
  - ISA Technology: Research and Information Fluency
  - Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.

#### Transfer

*Students will independently use their learning to...*

- Verbally advocate for an assigned policy option from an assigned roll, during a simulation in which they work in teams to influence a mock Presidential Advisory Panel on Environmental Issues.

#### Meaning

**Understanding**

*Students will understand that...*

- Global environmental problems (overpopulation, pollution, climate change, biodiversity) are important international issues that do not recognize country borders.
- Political systems create policies that impact global environmental problems.
- Good evidence is crucial to a good argument.
- In order to recognize multiple perspectives, sometimes one must argue a position contrary to one’s personal beliefs.

**Essential Questions**

1. What are the global environmental problems?
2. What causes these problems to manifest?
3. What challenges and trade-offs do we face as we deal with environmental problems?
4. How does a general point of view translate into specific policy recommendations for governmental action?

#### Acquisition

**Knowledge**

*Students will know...*

- Increased quality of life leads to greater impact on the planet’s resources (deforestation, desertification, extinction of species, climate change, water quality, acid rain, etc.)

**Skills**

*Students will be able to...*

- Research the Internet to find credible information (factual as well as illustrative) supporting their assigned position.
- Collaborate with others in multiple contexts.
- Deliver an effective speech to an audience of peers and judges.
## Stage 2 – Evidence

<table>
<thead>
<tr>
<th>CODE (M or T)</th>
<th>Evaluative Criteria (for rubric)</th>
<th>Performance Task(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T T T T T</td>
<td>The final presentation rubric includes the categories of Position (clarity and accuracy), Evidence, Response to Questions, Use of Visual, and Speaking Style</td>
<td>Students will demonstrate meaning-making and transfer by...</td>
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<tr>
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<td>• Collaborating with 3 other teammates to draft a coherent plan for presentation to the panel during the simulation</td>
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<td>• Researching, preparing, and delivering an individual 2-min formal speech, with visuals</td>
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<td>• Responding appropriately to questions by the panel</td>
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<td>A A M M T</td>
<td></td>
<td>Other Evidence (e.g., formative)</td>
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<td>• Biology concepts will be quizzed in that class.</td>
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<td>• Worksheets from the Choices curriculum are graded in both World Geo and Biology classes.</td>
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<td>• Discussions of the novel Ishmael (with its environmental themes) will occur in English class.</td>
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<td>• Written speeches will be graded by World Geo teacher.</td>
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<td>• Visuals will be assessed by Technology teacher.</td>
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<td>• Delivered speeches will be graded by an independent panel using the rubric.</td>
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</tbody>
</table>

## Stage 3 – Learning Plan

<table>
<thead>
<tr>
<th>CODE (A, M, T)</th>
<th>Pre-Assessment (respond in writing or via discussion)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>What are global problems?</td>
</tr>
<tr>
<td></td>
<td>How would you weigh the challenges and trade-offs involved in protecting the global environment?</td>
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<tr>
<td></td>
<td>What caused these problems to manifest?</td>
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</tbody>
</table>

### Learning Activities

<table>
<thead>
<tr>
<th></th>
<th>World Geography</th>
<th>Biology</th>
<th>Progress Monitoring</th>
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</thead>
<tbody>
<tr>
<td>M</td>
<td>Hook: Presentation (done in either class or in an assembly)</td>
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<tr>
<td>A A</td>
<td>Lesson 2</td>
<td>Lesson 2</td>
<td>Lab Report?</td>
</tr>
<tr>
<td>Day</td>
<td>Period</td>
<td>Lesson</td>
<td>Text</td>
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</tbody>
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| A   | A&M    | Lesson 3 | **Global Trends In Quality of Life, Land Use, Energy Consumption, & Wealth**  
Food for Thought  
Living on $500 A Year  
(Population Connection)  
HW Reading: “Rising Tide of Poverty” |
| M   | A&M    | Lesson 4 | **Global Environmental Problems**  
GEP Reading (Choices: pages 2-8)  
GEP Study Guide (Choices: page 5) |
| T   | A&M    | Lesson 5 | **Earth/Sun Relationships**  
Quiz: GEP Reading  
Earth/Sun Demonstration |
| A   | A&M    | Lesson 6 | **Environment & Economic Development**  
The Environment & Economic Development Reading  
(Choices: pages 9-16)  
Environment & Economic Development Study Guide |
| A   | A     | Lesson 7 | **International Environmental Issues**  
Environmental Issues on the International Agenda Reading  
(Choices: pages 17-24)  
| A   | A     | Lesson 8 | **Stakeholders of the Amazon**  
Environment and the Economy in the Amazon Region (Choices: pages 7-17)  
**Deforestation**  
“The Unkindest Cut”: Reading and Discussion (Population Connection-Earth Matters) |
| A   | A     | Lesson 9 | **Deforestation**  
“The Unkindest Cut”: Reading and Discussion (Population Connection-Earth Matters)  
**Oxygen Cycle**  
Clear Cut Effects  
(Sources: Unknown at this time) |
| A&M | A     | Lesson 10 | **Loss of Biodiversity**  
**Loss of Biodiversity**  
**Connections** |
| A | **Lesson 11**  
**Game Show Network**  
Go for the Green! (Population Connection-Earth Matters) | **Lesson 11**  
**Connections (cont.)**  
Energy Flow, Decomposition, Cycling (Sources: Unknown at this time) | game |
|---|---|---|---|
| M A | **Lesson 12**  
**Public Awareness**  
“The Lorax” by Dr. Suess  
Writing Activity | **Lesson 12**  
**Biodiversity**  
A World of Difference  
Hotspots (Sources: Unknown at this time) | How does the novelist of *Ishmael* advocate for his beliefs through the novel? Write an essay through English class. |
| T | **Lesson 13**  
**Research Assigned Roles**  
1. The Economist  
2. The Scientist  
3. Domestic Policy Analyst  
4. Foreign Policy analyst  
5. Presidential Advisory Panel Member (Choices: pages 34 & 36) | **Lesson 13**  
**Research Assigned Roles**  
1. The Economist  
2. The Scientist  
3. Domestic Policy Analyst  
4. Foreign Policy analyst  
5. Presidential Advisory Panel Member (Choices: pages 34 & 36) | Students will explain their role. |
| T | **Lesson 14**  
**Policy Options**  
Putting the Economy First  
Taking the Lead in the Green Economy (Choices: pages 30-34)  
*Students will explain, in general, how their role would argue for each position.* | **Lesson 14**  
**Policy Options**  
Promoting Sustainable Development  
Protecting Mother Earth (Choices: page 30 and pages 35-38)  
*Students will explain, in general, how their role would argue for each position.* |  |
| T | **Lesson 15**  
**Group Formation & Research**  
*Students will develop a well-researched argument with evidence.* | **Lesson 15**  
**Group Formation & Research**  
*Students will develop a well-researched argument with evidence.* |  |
| T | **Lesson 16**  
**Research & write speeches** | **Lesson 16**  
**Research & write speeches** | Grade written speech |
| T | **Lesson 17**  
**Pull Out/Prep/Simulation** | **Lesson 17**  
**Pull Out/Prep/Simulation** | Rubric |
| A&M&T | **Extension:**  
Travel to Heifer Village in Arkansas to live in simulated developing-world communities and to learn about sustainability in a hands-on environment. | Journal and blog post |