

## **Understanding Climate Change and its Impact on Global Communities**

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**Simulation for World History II class (10<sup>th</sup> grade) and Food for Thought class (12<sup>th</sup> grade) (a class on the politics of food and hunger)**

**Introduction:** Students will engage in a class simulation on the effects of climate change on different communities and the inherent difficulties in arriving at solutions given the multi-layered social, political and economic consequences.

### **Geographic Connections:**

D2.Geo.2.9-12. Use maps, satellite images, photographs, and other representations to explain relationships between the locations of places and regions and their political, cultural, and economic dynamics.

D2.Geo.5.9-12. Evaluate how political and economic decisions throughout time have influenced cultural and environmental characteristics of various places and regions

D2.Geo.9.9-12. Evaluate the influence of long-term climate variability on human migration and settlement patterns, resource use, and land uses at local-to-global scales.

**Vocabulary:** climate change; food security; stakeholders; global summit; cooperation

### **Content Standards:**

Key Ideas and Details:

CCSS.ELA-LITERACY.RH.11-12.1

Cite specific textual evidence to support analysis of primary and secondary sources, connecting insights gained from specific details to an understanding of the text as a whole.

Integration of Knowledge and Ideas:

CCSS.ELA-LITERACY.RH.11-12.7

Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.

Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.

**Essential (Compelling) Question:**

Why is cooperation so difficult to achieve in addressing the effects of climate change?

**Literacy through the Content Area:**

Literacy will be addressed through the following:

- News article on climate change / global summit on climate change
- Power Point presentation on climate change
- Diagrams / maps on climate change

**Placement of Lesson within Broader Curriculum/Context:**

This lesson will serve as a “bridge” between an informative unit on climate change and a unit on the effects of climate change and the difficulty in achieving consensus on how to deal with the problem. Students will engage in a simulation, both local and regional, to better understand the different “stakeholders” and the ways in which these various agents make it difficult to achieve consensus. Once students understand the depth of the impact of climate change, and that solutions for one group frequently pose issues for others (costs-benefits analysis), it will enrich their understanding of, and analytical process for, climate change, food security, and a host of other global problems.

**Learner Background:**

Both the World History II and Food for Thought classes are heterogeneous in terms of skill-set. There are students that have weaknesses in reading comprehension and processing. At the same time, there are students at grade level and students for whom the course serves as a second Social Studies course (these latter students are usually enrolled in an Advanced Topics class). Most, if not all, of the students are familiar with climate change, although they may not be as familiar with its effects and/or the various communities or “stakeholders” affected by climate change.

**Objectives for Lesson:** Students will be able to:

- Understand and define “climate change”
- Understand and articulate some basic effects of climate change (rise in temperature; rise in sea levels; decrease in food supply; conflicts / competition for food, etc.)
- Understand and identify the multiple layers of effects of climate change and the various “stakeholders” and/or communities affected by the problem

- Ultimately, research and analyze, in a group, the effects of climate change and the effectiveness of efforts to achieve consensus in a particular region of the world (case study)

### **Integration of 21st century skills:**

This entire lesson, and the two units that it “bridges,” require students to conduct research, answer and pose critical questions to solving a real world problem. By assigning the follow up research project / simulation, students will have to communicate, both verbally (with the use of technology) and in writing from the perspective of a “stakeholder.” Finally, students will have to think critically about other stakeholders’ perspectives in order to fully understand the inherent difficulties in building consensus with regard to solutions.

### **Assessment:**

Students will have to role-play in a Global Summit on Climate Change from the perspective of a particular “stakeholder.”

**Formative Assessment:** 1) They will have to conduct research on a particular situation related to climate change from the perspective of different stakeholders. They will have to make an oral statement along with written evidence and/or a presentation with facts, data to support their position.

**Summative Assessment:** After the simulation, they will have to turn in a reflective essay on the topic of why it was difficult to achieve consensus OR on the cost of consensus. What did different stakeholders have to “give up” in order to achieve consensus? Is it likely to produce positive results? (Do you think it will work? Why or Why not?)

**Materials/Resources:** List the materials you will use in each learning activity including any technological resources.

To introduce climate change, I will use the information and materials from the Presentations on Day 1 of the Institute

- “Climate Change is Here!” – WWF / Shaun White
- “Introduction to Climate Change Science” – Srinath Krishnan
- “Understanding Climate Change Impacts and Adaptation in Western European Agriculture” – Frances C. Moore
- “Climate Change, Food Insecurity and Conflict in Arab Countries – Dr. Clemens Breisinger

To introduce the lesson, I will modify the “Happy Village” simulation provided by Shaun White from the WWF and create a “Happy Village” activity based on a local example (USA).

To develop the lesson, I will use various resources, presentations, articles from the PIER Institute, including, but not limited to:

- [“Foodmageddon could be just 3 steps away” – globalpost.com](#)
- “What Climate Change Means for your Coffee” – ensia.com
- Middle East: Talking About Climate Change – irinnews.org
- “To Feed the World in 2050 we have to change course” – ensia.com
- “Crops Under a Changing Climate: What are the impacts in Africa?” ccafs.cgiar.org
- “How can we empower women in agriculture to end Hunger?” – The Guardian
- “Chinese Food security may be motivating investments in Africa.” -- The Guardian
- “Combating Climate Change: Farming Out Global Warming Solutions” – Scientific American
- Websites:
  - Arabspatial.org
  - Unispal.un.org
  - Map.feedingamerica.org
  - Committee on World Food Security (CFS)
  - Climate change map from Day 1, PIER Institute
- Articles from The Economist, The New York Times, and other periodicals and newspapers on climate change, food security and global “hot-spots” of crisis

**Lesson Development/Instructional Strategies** (This is the step-by-step part of your lesson. Think about following a recipe – what happens first? Where are the transitions? etc.)

- *First, the class will spend 2 periods (49 mins. each) on “What is climate change? How does it affect the globe?”*
- *Second, this lesson will be introduced as the “bridge” or “springboard” to an analytical assignment on building consensus under the question: “Why is consensus on how to address climate change so difficult to achieve?”*
  - *Students will be organized into groups and given a USA-version of “Happy Village” where they have to look at a climate change/ environmental problem from a multitude of perspectives and attempt to find a solution.*
  - *Students will share their group responses and then discuss why it was so difficult to arrive at a solution that satisfied all the various stakeholders.*
  - *At the end of the lesson, students will select a case study to examine the following in a research assignment (one week of research / group work).*

*Some possible case studies:*

- *India / Nepal / Bangladesh / Pakistan – water*
- *China / dams – water*
- *Israel / Syria / Jordan – water*
- *Deforestation – sub-Sahara Africa (Sudan, etc.)*
- *Acid Rain – Europe*
- *Logging – USA / Coal – USA*
- *Deforestation / Cattle grazing / Agriculture – Latin America*

- *Students will research the case study / problem in general, and then from the perspective of a particular stakeholder, and prepare, as a group, a “dialogue” about the problem and possible solutions. The group should prepare a multi-media 10-minute presentation on the causes and effects of the problem and then “simulate” a dialogue from the perspective of various stakeholders and demonstrate the work toward consensus, if possible. Students should be prepared to discuss the costs / benefits of reaching consensus or why they were unable to reach consensus.*

**Students Needing Differentiated Instruction:**

In my school, students with IEPs receive coaching / assistance from their Learning Resource Center specialists. Each classified student (and 504 student) has a designated specialist that helps “break down” the assignment into “compartments” to facilitate understanding and completion.