Lesson Two: Chinese History Focus

Class: United States History 1865- Present

Lesson: Chinese Industrialization and Environmental Restrictions

Focal: Chinese History and Forming Arguments

Context: Sophomores take US History. The school district is small and rural. There is a total of about 300 students in the high school. Classes are mixed ability (utilizing inclusion). Inclusion students are typically grouped in one class. Average class size is about 25 consisting of three sections of students. Prior to this lesson, students will have learned about the Progressive Era and US Industrialization. These lessons will study China's recent economy and industrialization efforts. We will discuss the nature of environmental policies and discuss the fairness of those levied on the Chinese.

Purpose: Students will be able to defend their point of view regarding environmental policies as they affect modern China.

Standards:

- Explain the effects of industrialization in the United States in the 19th century
- Explain the goals and outcomes of the late 19th and early 20th century reform movements of Populism and Progressivism with emphasis on: Conservation
- *Human Environmental Interaction:* Describe how changes in technology, transportation and communication affect the location and patterns of economic activities and use of productive resources
- Demonstrate how U.S. governmental policies, including taxes, antitrust legislation and environmental regulations affect individuals and businesses.

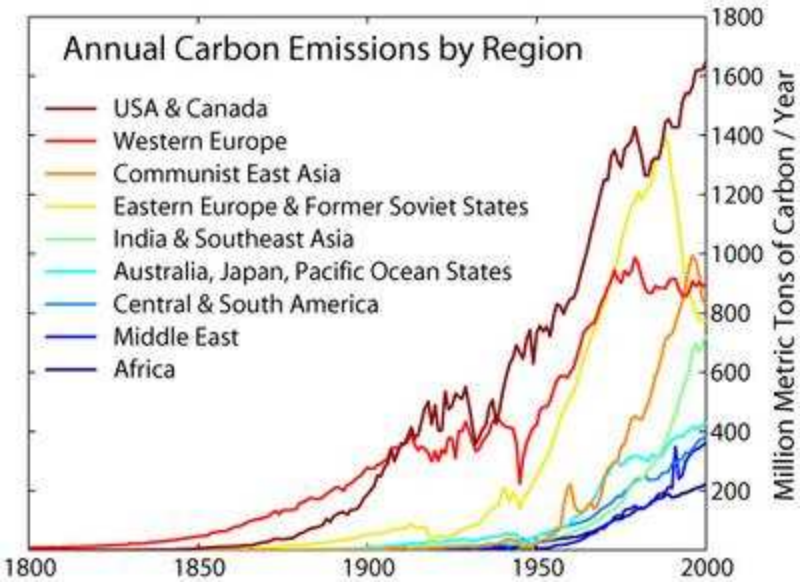
Overarching Question: Should China be required to lower its greenhouse gas emissions?

Subordinate Questions: Is the Kyoto Protocol effective in lowering emissions? Has China become an emissions dumping ground for developed countries? Given what we know about CO2 emissions today, should a developing country's CO2 emissions be restrained? Western countries account for much of the pollution in the atmosphere due to their unrestrained practices in the 1700s and 1800s, should those countries be required to limit their emissions more substantially?

Resources: Teacher lecture, Info about Kyoto Protocol and requirements for developing and developed countries

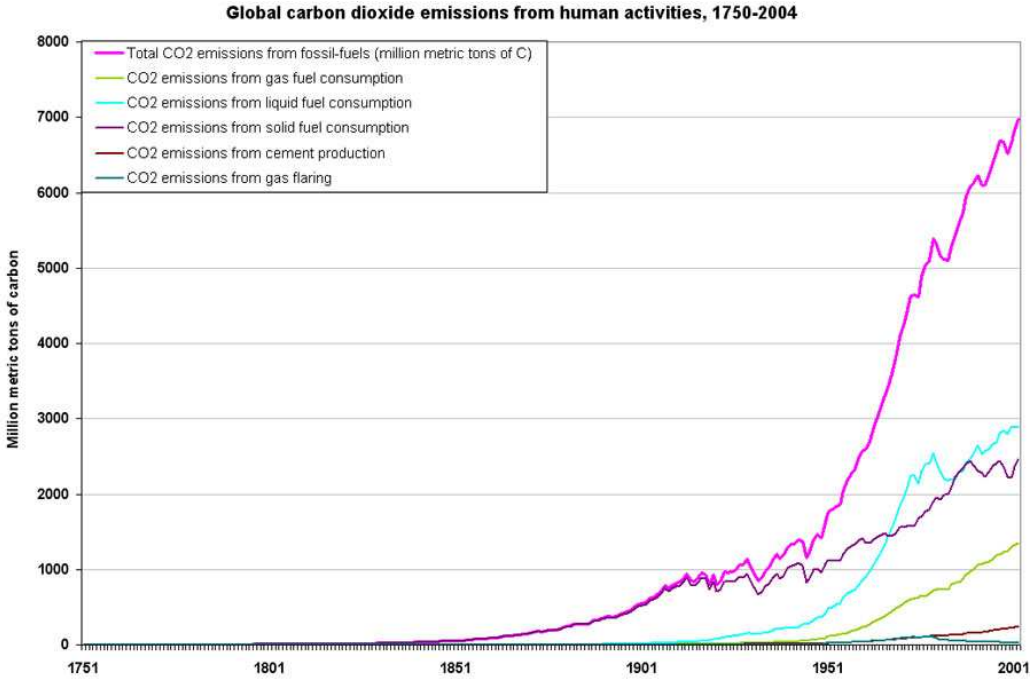
Activities

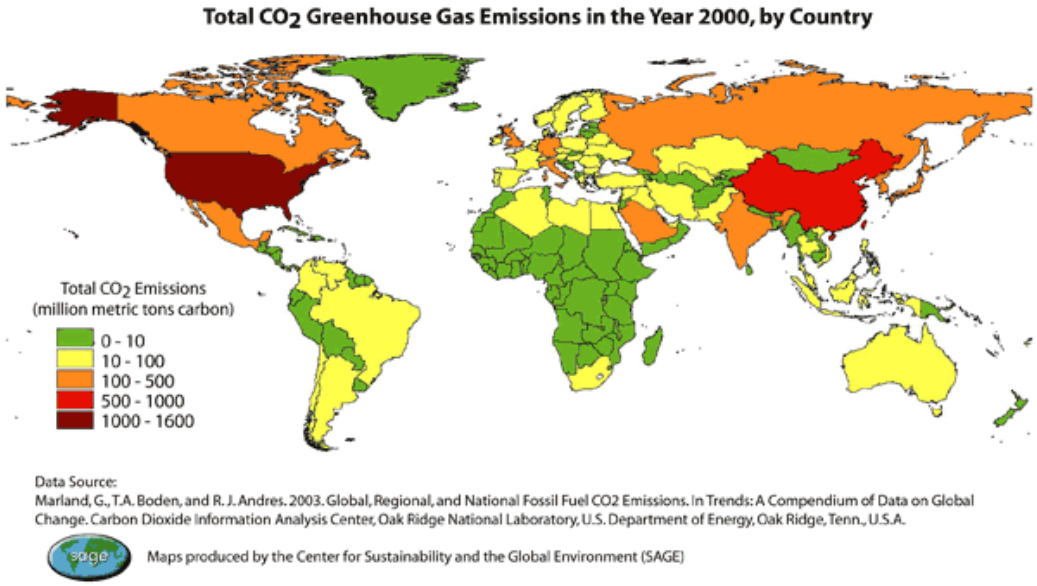
1) Brainstorming Activity: What problems did Industrialization bring about in the US? I will write answers on the board as students call them out. Today we are focusing on the environmental impact of industrialization. Take a look at this chart: From the table, what countries had the most CO2 emissions? What are we doing today to lower the emissions of countries like the US and Great Britain?

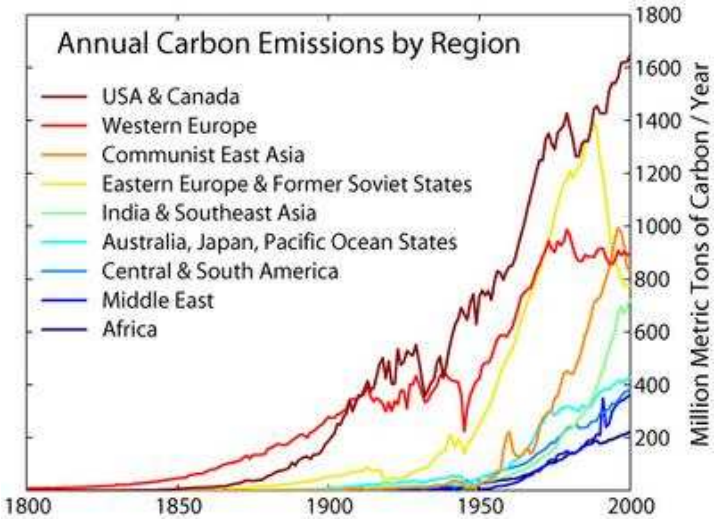


2) Intro to Kyoto Protocol: The Kyoto Protocol is geared towards reducing Greenhouse Gases. It is quite complicated, but overall there are 3 major mechanisms with which to do this: Eisssions Trading, Clean Development Mechanism, and Joint Implementation. What do these mean?
3) Group Work: Students will be divided into groups (6 groups total). Each group will be given a resource packet about one of the three mechanisms (provided from UNFCCC website). Students will be asked to summarize their mechanism using language they and their classmates understand. Each group will share their findings aloud. Since each mechanism will be studied by two groups, this will give students twice the opportunity to grasp those mechanisms they did not research. We will wrap up with a larger class discussion to iron out any remaining issues of confusion about the Protocol's mechanisms. Developing nations are not required to make promises about lowering greenhouse gas emissions. US produces 25% of greenhouse gas emissions and China is number two with 12%. But because China is a developing nation, their emissions are not capped.
4) Question is: Should China be required to lower its greenhouse gas emissions?
5) Lecture: Short lecture/discussion about Chinese economy and industrial growth. China has "modernized" more recently than the US or other western nations.
6) Small group work: Arguments for and against China being required to lower greenhouse gas emissions. Students will be provided with a chart packet and given time in the computer lab to research arguments.
7) Individual Work: After students have compiled their list of arguments they will be asked to rate the strength of each argument from 1-10 (ten being the strongest)
8) Final Assessment: Typed arguments (must have at least 8). Arguments may be for or against. Student must have rating for each argument visible and must annotate the rating. Finally, students must write a concluding paragraph stating whether they believe China should or should not be forced to lower it emissions reiterating their three strongest arguments.

Student Chart Packet







Outside Resources for Kyoto Mechanisms:

Source One: Kyoto Mechanisms from unfccc website

Emissions Trading Mechanism:
http://unfccc.int/kyoto_protocol/mechanisms/emissions_trading/items/2731.php

Greenhouse gas emissions – a new commodity

Parties with commitments under the Kyoto Protocol (Annex B Parties) have accepted targets for limiting or reducing emissions. These targets are expressed as levels of allowed emissions, or "assigned amounts," over the 2008-2012 commitment period. The allowed emissions are divided into "assigned amount units" **(AAUs).**

Emissions trading, as set out in Article 17 of the Kyoto Protocol, allows countries that have emission units to spare - emissions permitted them but not "used" - to sell this excess capacity to countries that are over their targets.
Thus, a new commodity was created in the form of emission reductions or

removals. Since carbon dioxide is the principal greenhouse gas, people speak simply of trading in carbon. Carbon is now tracked and traded like any other commodity. This is known as the "carbon market."

Other trading units in the carbon market

More than actual emissions units can be traded and sold under the Kyoto Protocol's emissions trading scheme.

The other units which may be transferred under the scheme, each equal to one tonne of CO2, may be in the form of:

- A removal unit **(RMU)** on the basis of land use, land-use change and forestry (LULUCF) activities such as reforestation
- An emission reduction unit **(ERU)** generated by a joint implementation project
- A certified emission reduction **(CER)** generated from a clean development mechanism project activity

Transfers and acquisitions of these units are tracked and recorded through the registry systems under the Kyoto Protocol.
An international transaction log ensures secure transfer of emission reduction units between countries.

The commitment period reserve

In order to address the concern that Parties could "oversell" units, and subsequently be unable to meet their own emissions targets, each Party is required to maintain a reserve of ERUs, CERs, AAUs and/or RMUs in its national registry. This reserve, known as the "commitment period reserve", should not drop below 90 per cent of the Party's assigned amount or 100 per cent of five times its most recently reviewed inventory, whichever is lowest

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Relationship to domestic and regional emissions trading schemes

Emissions trading schemes may be established as climate policy instruments at the national level and the regional level. Under such schemes, governments set emissions obligations to be reached by the participating entities. The European Union emissions trading scheme is the largest in operation.

Clean Development Mechanism:
http://unfccc.int/kyoto_protocol/mechanisms/clean_development_mechanism/items/2718.php

Clean Development Mechanism (CDM)

The Clean Development Mechanism (CDM), defined in Article 12 of the Protocol, allows a country with an emission-reduction or emission-limitation commitment under the Kyoto Protocol (Annex B Party) to implement an emission-reduction project in developing countries. Such projects can earn saleable certified emission reduction (CER) credits, each equivalent to one tonne of CO2, which can be counted towards meeting Kyoto targets.

The mechanism is seen by many as a trailblazer. It is the first global, environmental investment and credit scheme of its kind, providing a standardized emissions offset instrument, CERs.

A CDM project activity might involve, for example, a rural electrification project using solar panels or the installation of more energy-efficient boilers.

The mechanism stimulates sustainable development and emission reductions, while giving industrialized countries some flexibility in how they meet their emission reduction or limitation targets.

Operating details of the CDM

A CDM project must provide emission reductions that are additional to what would otherwise have occurred. The projects must qualify through a rigorous and public registration and issuance process. Approval is given by the Designated National Authorities. Public funding for CDM project activities must not result in the diversion of official development assistance.

The mechanism is overseen by the CDM Executive Board, answerable ultimately to the countries that have ratified the Kyoto Protocol.

Operational since the beginning of 2006, the mechanism has already registered more than 1,650 projects and is anticipated to produce CERs amounting to more than 2.9 billion tonnes of CO2 equivalent in the first commitment period of the Kyoto Protocol, 2008–2012.

For up-to-date information on the CDM, see the UNFCCC CDM website

Joint Implementation:
http://unfccc.int/kyoto_protocol/mechanisms/joint_implementation/items/1674.php

Joint Implementation (JI)

The mechanism known as “joint implementation,” defined in Article 6 of the Kyoto Protocol, allows a country with an emission reduction or limitation commitment under the Kyoto Protocol (Annex B Party) to earn emission reduction units (ERUs) from an emission-reduction or emission removal project in another Annex B Party, each equivalent to one tonne of CO2, which can be counted towards meeting its Kyoto target.

Joint implementation offers Parties a flexible and cost-efficient means of fulfilling a part of their Kyoto commitments, while the host Party benefits from foreign investment and technology transfer.

Eligibility and approval

A JI project must provide a reduction in emissions by sources, or an enhancement of removals by sinks, that is additional to what would otherwise have occurred. Projects must have approval of the host Party and participants have to be authorized to participate by a Party involved in the project.

Projects starting as from the year 2000 may be eligible as JI projects if they meet the relevant requirements, but ERUs may only be issued for a crediting period starting after the beginning of 2008.

Track 1 and Track 2 procedures

If a host Party meets all of the eligibility requirements to transfer and/or acquire ERUs, it may verify emission reductions or enhancements of removals from a JI project as being additional to any that would otherwise occur. Upon such verification, the host Party may issue the appropriate quantity of ERUs. This procedure is commonly referred to as the “Track 1” procedure.

If a host Party does not meet all, but only a limited set of eligibility requirements, verification of emission reductions or enhancements of removals as being additional has to be done through the verification procedure under the Joint Implementation Supervisory Committee (JISC). Under this so-called “Track 2” procedure, an independent entity accredited by the JISC has to determine whether the relevant requirements have been met before the host Party can issue and transfer ERUs.

A host Party which meets all the eligibility requirements may at any time choose to use the verification procedure under the JISC (Track 2 procedure).

For up-to-date information on JI, see the UNFCCC JI website.