

Climate Change: Introduction | Lesson Plan

Overview

- Length: 45 minutes
- Grade level: High school
- Courses: Civics, Global Issues, courses about climate change

Learning Objectives

Students will understand how the greenhouse effect contributes to climate change and how human activities contribute to increasing global average temperatures.

Materials

- World101: [What Is Climate Change?](#) (4:25)
- World101: [The Greenhouse Effect](#) (664 words/ 2 ½ pages)
- World101: [Why Scientists Are Watching Greenland](#) (889 words/ 3 pages)
- World 101: [Sources of Energy: A Comparison](#) (1114 words/ 4 pages)
-  [Climate Change: Introduction | Guided Reading Handout](#)
-  [Climate Change: Introduction | Presentation](#)

No Homework Due

Class Plan:

1. (5 Minutes) **Think-Pair-Share:** Ask students to think about what they know about climate change. Pair with neighbors to discuss. Share as class.
2. (7 Minutes) **Watch:** [What Is Climate Change?](#) (4:25)
 - **Ask:** How have humans contributed to climate change? What are the challenges moving forward if climate change becomes more dramatic? How can humans address climate change?

 [Climate Change: Introduction | Guided Reading Handout](#) **MAY BE USED IN FOR NEXT STEPS**

3. (8 Minutes) **Read/ View Charts:** [The Greenhouse Effect](#)
 - Have students read/look over graphics on the Greenhouse Effect alone or with a partner.
 - **Ask:** What role do greenhouse gas emissions play, and why is this cause for concern? How does human activity increase the greenhouse effect? How does this impact the natural state of the environment? When did Greenhouse emissions see a noticeably increase?
4. (15 Minutes) **View:** [Why Scientists Are Watching Greenland](#)
 - **Discuss Interactive:** “Greenland’s Tracy and Heilprin Glaciers Melt” - Ask students what they notice about the change in Greenland’s cover. What are problems that might arise as this trend continues?
 - **Read/ View:** ”Healthy + Unhealthy Melting Cycle Chart” - Ask: How has climate change impacted the natural cycle in Greenland? How does this impact the oceans?
 - **Watch:** [Greenland Ice Loss](#) (34 seconds): This covers 2002-2016 - ask students what they notice about the trend since 2002. Look at the embedded chat on video. Is the annual recovery (up trend) changing? Is the process of loss accelerating? Do levels of recovery increase, decrease, or stay the same?

- **View:** Interactive Chart - Global Warming and Sea Level Rise Chart - look over with students. How are climate change and sea level rise related? How does this factor into environments like those in Greenland?
 - **View:** Interactive Map - Rising Sea Levels - Have students look at major coastal cities to see how sea level rise could impact them. (New York City is pinned).
5. (10 Minutes) **Discuss:** Why is climate change so important to understand? How have humans contributed to it? How might climate change affect daily life for people? What should humans do with this knowledge?

Homework Assigned:

- Have students read over World101: [Sources of Energy: A Comparison](#) (Reading/ Charts)
- Have students pick a source of energy to research in depth and defend its use in producing electricity (paragraph, page, mock tweet).

If you have additional time, check out the [☰ Climate Change : Introduction | Discussion Guide](#) for connections and more in-depth extension.

Standards

Educating for American Democracy Roadmap:

- What are the costs and benefits, and how are these defined, to different ideas of climate sustainability—for different peoples within the United States, and for the natural landscape? (CSGQ2.4B)

C3 Framework:

- D2.Civ.13.9-12. Evaluate public policies in terms of intended and unintended outcomes, and related consequences.
- D3.4.9-12. Refine claims and counterclaims attending to precision, significance, and knowledge conveyed through the claim while pointing out the strengths and limitations of both.
- D4.1.9-12. Construct arguments using precise and knowledgeable claims, with evidence from multiple sources, while acknowledging counterclaims and evidentiary weaknesses.
- D4.6.9-12. Use disciplinary and interdisciplinary lenses to understand the characteristics and causes of local, regional, and global problems; instances of such problems in multiple contexts; and challenges and opportunities faced by those trying to address these problems over time and place.