

Activity

# Solar Geoengineering Mini Simulation Activity

## Learning Objectives

Students will evaluate the implications of climate change and geoengineering through the lens of the U.S. National Security Council.

## Length

Two class periods

## Materials

[Solar Geoengineering](#)



[What is the National Security Council? \(Video\)](#)



[Global Climate Change Policy Case Study](#)



[Climate Change Technology: Is Shading the Earth Too Risky?](#)



[NSC Roles & Responsibilities](#)



## Instructional Plan

### Session One (Setting the Stage/NSC and Case Background)

1. **(15 Minutes) Introduction to the National Security Council (NSC):** This will build students' background knowledge on U.S. Foreign Policy and the NSC. As a class, view the following two videos:
  1. **Watch:** CFR Education | [What is the National Security Council?](#) (2:28)
  2. **Watch:** CFR Education | [Global Climate Change Policy Case Study](#) (2:11)
  3. **Reflect:** Ask students to reflect on the NSC's importance as a decision making tool. Students might also answer the following questions as written thought prompts: How is climate policy tied to U.S. Foreign Policy? Why might climate change be considered a national security issue? In other words, why might the NSC choose to address the issue of climate change in a meeting?
  4. **Discuss:** Ask students to share their responses with the class. End the discussion by noting that U.S. defense and intelligence leaders agree that climate change is a threat to U.S. national security, and that multiple presidential administrations have devoted attention to the wide-ranging implications of climate change on U.S. national security.
2. **(5 Minutes) Assign Case Roles:** In advance of the simulation, assign each student a role from the attached list (above). Each student should read the description and goals of their role. This will be the lens through which they engage in the simulation as a member of the NSC. Tell them to consider their assigned role during the next step.
3. **(20 Minutes) Overview and The Situation: Solar Geoengineering:** Students will take notes on a short

video that sets the stage for the CFR Education simulation they will be focusing on.

1. **Watch:** The Economist | [Climate change technology: is shading the earth too risky?](#) (10:37)
2. **Reflect:** Ask students to reflect on the benefits and risks of solar engineering as a possible climate change solution (individually or in small groups).
4. **(15 Minutes) Policy Options:** As a class, read *Overview*, *The Situation*, and *Decision Point* from the [CFR Education Mini Simulation - Solar Geoengineering](#). Policy options consist of the following; however, students should feel free to suggest alternate policy options that respond to concerns raised in the mini simulation:
  1. *Do not pursue solar geoengineering.*
  2. *Take steps toward solar geoengineering, but clarify that pursuing it will require an international agreement.*
  3. *Take steps toward solar geoengineering and declare that the United States will pursue it even without an international agreement.*
5. **(5 min) Conclusion:** End class by providing students with a brief description of the simulation role play. Ensure students understand that each student will be required to participate in the simulation and that preparation will be key to the simulation's success. Emphasize the utility of the evening's homework (below) in helping students prepare.

**Session Homework:** Students should write a brief position memo (less than one page) that identifies which policy option they support, bears in mind their assigned role, and defends their choice.

#### Session One Instructor Notes:

- If a class is larger than 15 students, you may consider breaking your class into multiple National Security Councils and running the groups simultaneously. This will afford an opportunity following the simulation for students to discuss their various responses and explain why one group may have chosen a policy option that is different from another group's choice.
- Students may use CFR Education's [How to Write a Position Memo](#) to help draft their homework. This resource includes an [NSC Sample Position Memo](#) that students might use as a template.

#### Session Two: (CFR Education Mini Simulation - Solar Engineering)

1. **(5 Minutes): Introduction:** As students enter the classroom, have them sit in a circular arrangement. Remind students of the day's schedule and provide an additional reminder that everyone is expected to participate.
2. **(45 Minutes): [CFR Education Mini Simulation - Solar Geoengineering](#)** While timing will vary based on classroom variables like class size and length, it is recommended to use one full class period for this simulation. A detailed organizational plan for simulation runtime can be found below.
3. **(10 Minutes): Debrief:** Provide students an opportunity to reflect (either individually or as a class) on their simulation experience. Questions to ask may include:
  1. What decisions did you reach?
  2. What did you think about the president's decision as your character?
  3. What do you think about the president's decision individually (as yourself)?
  4. What new insights do you have into: climate change/geoengineering/the operation of the National Security Council/the challenges of reaching consensus on policy?
  5. What challenges did you expect (or not expect) while playing the simulation? How did you overcome these challenges?
  6. What skills did you use while playing out the simulation?
  7. What is your biggest takeaway from this experience?

#### Session Two Instructor Notes:

- The focus of this mini simulation will be the work done during the prior class session—with a particular focus on the Mini Simulation document (*Overview*, *The Situation*, and *Decision Point*).
- In general, the *National Security Advisor* role is taken on by the teacher as it is the facilitator role—responsible for managing the discussion and the clock. In a larger classroom with multiple discussions happening at once, instructors should assign students to the role of National Security Advisor and be prepared to facilitate concurrent debates.
- The role of the *President* requires close work with the National Security Advisor. Their goal is to ask clarifying

questions as needed. This role could be set aside for a stronger, more enthusiastic classroom leader (to encourage them to listen and synthesize notes) or for a more reluctant student that the National Security Advisor could support. In general, the president is most active during Round Three, where they will be asked for their final decision based on the options presented.

Use the chart (below) to guide the discussion and debate for the CFR Education Simulation.

### Session Two Homework

Students should write a brief Policy Review Memo following the simulation. This reflection should be approximately 1-2 pages in length. The memo should include:

- Summary of the issue
- Analysis of the options discussed
- Recommendation for which policy option is best
- Reflection/ Connection - This section is intended to encourage civic action or awareness about the issue. Students should consider ways in which their own community might respond to the issue. In this case, questions might include: *Why is climate change such an important issue? In what ways have you seen climate change discussed locally or nationwide? What role should the United States play in addressing climate change? How might solar geoengineering impact your community? Why? What steps do you think the United States can realistically take to combat change? Why?* Inform students that this reflection section should be brief and considered a starting point for further civic engagement.

### United States National Security Council (NSC) Simulation Organization

Each NSC simulation features three rounds. Timing may vary based on class size and/or length.

Round	Timing Objectives	Procedural Notes
One	15 minutes	<ol style="list-style-type: none"> <li>1. Present initial positions to the president.</li> <li>2. Investigate the nuances of the positions through questioning.</li> <li>3. Clarify the central questions to be debated.</li> </ol>
Initial Positions	Approx. 30 sec to 1 min per person	Each participant presents their position statement. If time permits, the president may ask questions to understand each NSC member's position and bring out the essential questions they wish to debate.
Two	15 minutes	<ol style="list-style-type: none"> <li>1. Clarify obstacles, risks, opportunities, and threats</li> <li>2. Evaluate merits of various positions</li> </ol>
Debate and Deliberation		Debate and Deliberation. Participants can defend their recommendations and identify potential areas of compromise agreement. The National Security Advisor will call on students in the order in which they volunteer. While all students should be encouraged/ incentivized to speak during this round, time constraints will play a major factor in how this round is handled.

		1. Narrow options to a few well-focused strategies that the president prefers.	
Three	15 minutes	2. Provide the president with clear recommendations (from NSC members), through consensus or a vote	President starts by stating 1-3 preferred options.
Final Positions/ Presidential Decision	Approx. 30 sec to 1 min per person	3. Presidential decision	

### For the National Security Advisor

(Facilitator Role)

**Round 1:** Call on everyone for their opening statements, keeping to a strict time limit. The president doesn't have a specific time limit, but you should keep things moving by not letting the president get bogged down on one issue or policy option.

**Round 2:** Students do not need to follow a prescribed speaking order; you can call on them as they raise their placards. Feel free to pose questions or propose discussion topics if you feel that certain issues are not receiving adequate consideration. You will want to move on to Round 3 when all policy options have been discussed and all of the president's questions have been answered.

**Round 3:** Ask students to make a final case for their positions. If consensus seems possible, you could work toward it; if not, just make sure each option has been clearly presented to the president. Remember, the NSC is not democratic and is an advisory, not decision-making, body. There is no vote, and the president does not need to choose the most popular option.

### For the President

**Before Round 1:** Review all the position memos, if you can. As students are presenting their opening statements, the president can ask questions to clarify or help draw out the differences between one policy option and another. Try not to get too deep in the weeds, though—that is what Round 2 will be for.

**Round 2:** The president can take a more active role. If they have concerns about a policy option, ask questions; if some policy options seem stronger than others, say so. If an element is not being discussed, raise it.

**Round 3:** Once the president has heard all the policy options, they should choose whichever policy option they think is best. They may choose to combine the strongest elements of several different options. Remember, the NSC is not democratic and is an advisory, not decision-making, body. There is no vote. The president does not need to choose the most popular option. The president's decision must be made and announced before the wrap-up discussion.