

Projected Climate Change

Your team of experts will gather in-depth information dealing with climate change over the next century. The information you gather on this topic will be vital for the group discussion that will take place toward the end of your visit to the Museum, which will focus on:

"What evidence can be used to guide decisions related to climate change?"

Answers to this worksheet can be found in the *A Changing but Uncertain Future*, *Human Choices and Global Warming*, *Global CO₂ Emissions Calculator*, and *American CO₂ Emissions Calculator* stations.

A Changing but Uncertain Future

1. Examine the sliding video screen and graph of temperature and CO₂ projections for the 21st century.
 - a. In what year are global CO₂ levels predicted to reach 450ppm?
 - b. Do both models predict the exact same future temperature changes?
 - c. Using the sliding video screen, which region of the world do both models predict the most warming?
 - d. What are the three major sources of uncertainty that can cause differences between climate models and projections?
 - 1.
 - 2.
 - 3.

Human Choices and Global Warming

2. Turn the knob to view each of the different scenarios, then complete the table:

| Scenario | CO ₂ value in 2100 (Blue Line) | Temperature value in 2100 (Red Line) |
|----------|---|--------------------------------------|
| 1 | 1000ppm | |
| 2 | | 63.0 °F |
| 3 | 730ppm | |
| 4 | | 61.2 °F |
| 5 | 540ppm | |

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3. a. Considering all of your previous answers, can we be 100% sure about our estimates of future climate change?
- b. Even if we can't totally predict all of the details of future climate change, what can we say for sure about the connection between CO_2 levels and temperature?

Global CO_2 Emissions Calculator

4. Which country produces the most CO_2 per person (per capita), both in 2000 and 2025?
5. Which country's total CO_2 production (per nation) increases the most between 2000 and 2025?
6. Looking at your answers for questions 4 and 5, who should be most concerned about reducing their CO_2 production, industrial countries like the USA, or developing countries like China, or both?

American CO_2 Emissions Calculator

7. Find the action for each set of options that would reduce American CO_2 emissions the most and record them below.

Lifestyle Options

National Options

8. From the lists you viewed in question 7, which set of actions are you most likely to try?

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