

# UNDERSTANDING CLIMATE CHANGE

## The Basics: The Science of Climate Change

Presenter: Melanie Nakagawa, Policy Advisor for Climate Change, Energy, Environment, and Oceans to U.S. Secretary of State John Kerry

### Lesson Description

A primer on the basic science of climate change, examining the differences between climate and weather and how scientists determine that the planet is getting hotter. This lesson also takes a detailed look at greenhouse gases - what they are, the role of human behavior in releasing them, and their effect on climate change.

### Lesson Overview

1. The scientific basis for climate change.
2. Understanding the difference between weather and climate change.
3. The role of human-generated greenhouse gases in warming the planet.

### Discussion Questions

1. Are people in your community aware of climate change? How do people in your community discuss climate change? What information and in what form would resonate the most in convincing your community that climate change is a real threat to human existence?
2. Because climate change is measured over years as opposed to days and weeks, it is often difficult for humans to see how their daily activities contribute to a dangerous warming of the planet. What are some of the signs you see that tell you that climate change is occurring? What historic changes to your habitat have been identified that can be linked to climate change?
3. Burning fossil fuels (coal, oil, gas) releases carbon dioxide into the atmosphere as heat-trapping greenhouse gases. What activities do you engage in or see in your community that involves the burning of fossil fuels? Can you identify ways to reduce these activities that won't unfairly affect those that burn fossil fuels?

### Developmental Actions

1. Research the causes of climate change. Collect information from academics and civil society organizations working on this issue and identify specific causes that relate to your community. Develop an action plan for your community of possible ways to reduce the burning of fossil fuels. Identify the benefits and challenges of implementing such a plan.

---

#### About the Video Presenter

**Melanie Nakagawa** joined the U.S. Secretary of State's Policy Planning Staff in June 2013. Ms. Nakagawa's portfolio includes climate change, energy, environment, and ocean issues. Previously, she served as the Senior Energy and Environment Counsel on the U.S. Senate Foreign Relations Committee. Prior to her government service, she was an attorney with the Natural Resources Defense Council. She received her A.B. from Brown University and her M.A. and J.D. from American University.