Global Warming

What is global warming?

What can we do?

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Source materials: Gleason, Karecki, Reif (MIT)
What is global warming?
How Global Warming Works

- Fossil fuels (coal, oil, natural gas)
- Carbon Dioxide (CO₂)
The Sun’s energy passes through the car’s windshield.

This energy (heat) is trapped inside the car and cannot pass back through the windshield, causing the inside of the car to warm up.

Example of the Greenhouse Effect
What’s the difference between “global warming” and “climate change”?
Difference

GLOBAL WARMING is the increase of the Earth’s average surface temperature due to a build-up of greenhouse gases in the atmosphere.

CLIMATE CHANGE is a broader term that refers to long-term changes in climate, including average temperature and precipitation.
Why is global warming happening?
Burning of Fossil Fuels

Pollution from coal, natural gas, and oil
We all use energy all day!
Effects of Global Warming

- Rising Sea Level
- Increased Temperature
- Habitat Damage and Species Affected
- Changes in Water Supply

For MIPA day. December 10, 2010
Portage Glacier

- Alaska

Photos: NOAA Photo Collection and Gary Braasch – WorldViewOfGlobalWarming.org
Colorado River

- Arizona

June 2002

Dec 2003
When did global warming start?

For MIPA day. December 10, 2010
Global Atmospheric Concentration of CO₂

![Graph showing the increase in CO₂ concentration from 1870 to 2000. The concentration has increased from 260 parts per million to 370 parts per million.](image)
Goal: Reductions in CO₂ Per Year

After Pacala and Socolow, 2004; AR1 CarBen3 Spreadsheet
Our Goal

- Produce electricity efficiently
- Use electricity efficiently
- Vehicle efficiency
- Solar and Wind Power
- Biofuels
- Carbon capture and storage

Reductions in CO₂ Per Year

2007

After Pacala and Socolow, 2004; AR1 CarBen3 Spreadsheet
What’s being done now to reduce our emissions?

Wind Power  Solar Power  Fuel-Efficiency
What can you do to help solve the problem?
Simple Things To Do (1)

Turn off your computer or the TV when you’re not using it.

Take shorter showers. Heating water uses energy.

Keep rooms cool by closing the blinds, shades, or curtains.

Turn off the lights when you leave a room.

Use compact fluorescent bulbs.
Simple Things To Do (2)

- Dress lightly when it’s hot instead of turning up the air conditioning. Or use a fan.
- Dress warmly when it’s cold instead of turning up the heat.
- Offer to help your parents keep the air filters on your AC and furnace clean.
- Walk short distances instead of asking for a ride in the car.
- Plant a tree.
- Recycle.
THANK YOU