

BEFORE YOU VISIT

grades 9-12

These discussion starters and activities are designed to spark your students' interest in the exhibition and to prepare them for the concepts they'll encounter.

Discussion Starters

CLIMATE CHANGE

- What are some recent news stories about climate change?
- What conditions—such as the average temperature or the amount of rainfall—change as climate changes?
- Describe how organisms might respond to these changes.
- How would a rise in sea level affect where we live (e.g., housing, transportation)?

ENERGY USE

- Where does the energy that we use come from?
- What are some recent news stories about energy use—locally, nationally, or globally?

Activities

HOW GREENHOUSE GASES ABSORB HEAT

Objective: To understand that CO₂ absorbs heat in the atmosphere.

Description: In this experiment, student teams will compare the way two “atmospheres,” one higher in CO₂, trap heat. Materials include jars, thermometers, baking soda, vinegar, tubing, and stoppers.

Download activity at:

amnh.org/resources/rfl/web/climatechangeguide/activities/gasestrapheat.html

SCIENCE BULLETINS: CLIMATE CHANGE STORIES

Objective: To explore current research related to climate change.

Description: Students can choose from an array of videos, interactives, and essays that explore cutting-edge scientific research on climate change. Stories include “Bio Snapshot: Climate Change Affects Ecosystems,” “Earth Feature: Melting Glaciers, Clues to Climate Change,” “Human Snapshot: Did Climate Change Guide Early Migrations?,” and “Earth Viz: Sea Ice 2000-2008.”

Videos, Interactives, and Essays available at:

sciencebulletins.amnh.org

Click on the “Climate Change” tab at the top right. Select a video or interactive and press “play.” In the lower left column, you'll find supporting resources such as essays, interactives, data, and/or educator resources.

Tips on Using the Student Worksheet

On the other side of this insert, you'll find a worksheet that your students can use to explore the *Climate Change* exhibition independently.

Before coming to the Museum, you may wish to distribute copies of the **Map of the Exhibition** and point out the areas that students will be exploring.

STUDENT WORKSHEET

grades 9-12

1. Investigate How Climate Works

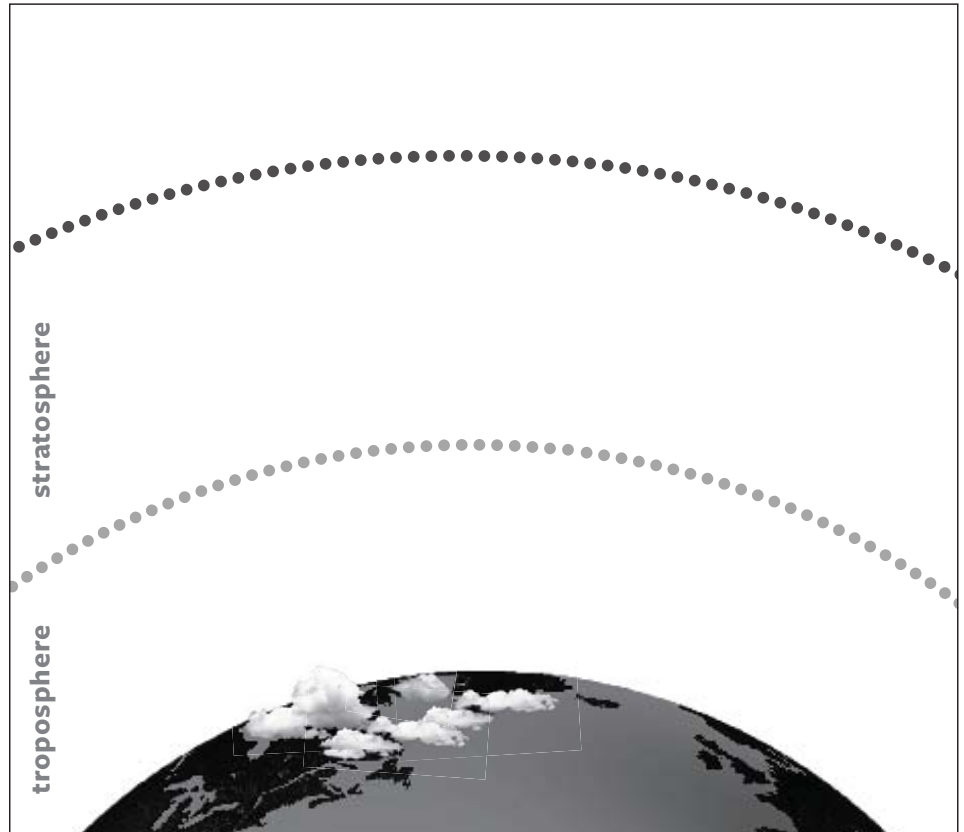
Find the Greenhouse Effect wall in the **Climate Change Today** area. On the diagram, add arrows that show energy flow.

Next, find the animated globe in each of these four areas:

- **Changing Atmosphere**
- **Changing Ice**
- **Changing Ocean**
- **Changing Land**

For each globe, choose and watch an animation. Record your responses to the questions below on the back of this page.

- Describe the phenomenon that you see in the animation.
- How is it connected to the climate system?



2. What Can We Do?

Explore the **Making a Difference** area. What actions can your school or community take to reduce CO₂ emissions?

3. Investigate Energy Solutions

Go to the **A New Energy Future** area and explore the various “clean” energy sources that could meet future needs. Record your responses to the questions below on the back of this page.

- Why is “clean” electricity key to solving climate change?
- What do you think governments like ours should do?