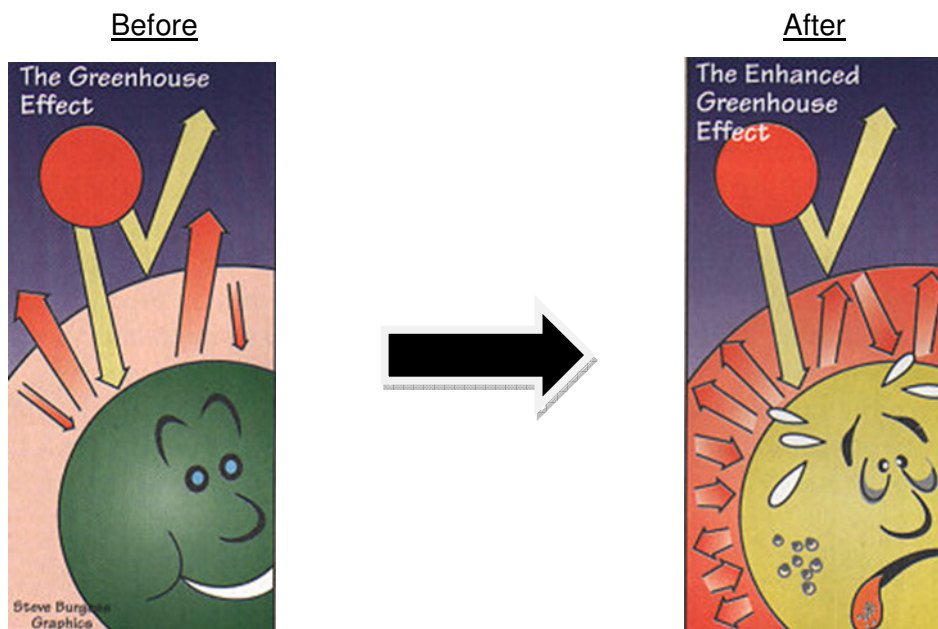


# The Topic: *Global Warming*

## Introduction to the Greenhouse Effect – Role play activity

The Greenhouse Effect is the natural phenomenon that warms the Earth, enabling it to support life. The sun's warmth passes easily through the blanket of gases around the Earth to reach the Earth's surface. However, instead of this heat being lost back to space when it is reflected by the Earth's surface, certain gases in the atmosphere (called greenhouse gases) block this heat. Greenhouse gases are a natural part of the atmosphere and without them we could not live on Earth.

During this activity, be aware of the changes that are taking place and state a cause and effect relationship between the changes in heat and greenhouse gases below.



## Conclusion:

## The Basics

For several years believers and skeptics have argued about the causes of global warming. The problem is complicated because believers warn that man-made causes if left to advance too far may be irreversible. Reduction of the rainforests, continued growth in hydrocarbon industries, increases in livestock, and depletion of the ozone are all considered factors in the debate. Skeptics maintain that the climate change is a natural phenomenon, that man's effect on nature is largely overrated. The fact is that for several years, the earth's temperature is rising. The problem remains in deciding what if anything we can do about it. Your job is to use the Internet resources below to find scientific evidence to support the cause and effects of global warming.

To access this webquest, type the URL below into your browser

<http://ourteacherspage.com/mrb/Contact/7.html>

### Part A: The Greenhouse Effect - Global Warming

View this short video clip about "The Greenhouse Effect (Global Warming)" and answer the following questions.



1. According to weather records from the last century, what has happened to the average surface temperature on Earth?
2. What do scientists believe is the cause of the climate change?
3. What did American geochemist David Keeling discover about CO<sub>2</sub> in the atmosphere?
4. How has the percentage of CO<sub>2</sub> in the atmosphere changed since the Industrial Revolution?
5. What evidence does the South Cascade Glacier in Washington State have to support the theory of global warming?
6. How much CO<sub>2</sub> do humans pump into the atmosphere every year?

### Part B: Website Resources

Browse the websites below and answer the following questions.

Are our industrial and agricultural practices changing Earth's climate? You'll examine humankind's impact on the global environment as well as Earth's past in an attempt to answer this important question.

**Earth on Fire** (NASA Classroom of the Future™)

<http://www.cotf.edu/ete/modules/carbon/earthfire.html>

<http://www.earth911.org/master.asp?s=lib&a=globalwarming/default.asp>

<http://www.koshland-science-museum.org/exhibitgcc/index.jsp>

<http://www.maf.govt.nz/mafnet/rural-nz/sustainable-resource-use/climate/impact-on-industries/>

## Questions

1. Why should I be concerned about global warming?
2. What is being done to help prevent global warming?
3. What can I do to help prevent global warming?
4. What are the “Ten basic tips to help stop climate change”?
5. What affect will global warming have on the climate?
6. How may climate change impact on agriculture and forestry?

## **Part C: Global Warming Informational Poster**

Using the knowledge you acquired from this activity, you and your partner will develop an information poster about global warming. Your poster must include the following:

1. Explanation of the greenhouse affect and how it is necessary to sustain life of Earth, and how it is the major cause of global warming.
2. The major causes of global warming.
3. What affect is global warming is having on climate?
4. The source of the major greenhouse gases.
5. What can be done to help prevent global warming?
6. How might global warming impact and/or alter the global ecosystem.

**Extra heat is kept in the air by 'greenhouse gases' produced from human activity.**

**Some sunlight is bounced back into space.**

**Some heat is released into space.**

**Less heat is able to be released into space.**

**Some heat is naturally kept in by gases in the air like water vapour.**

