Greenhouse Gases in a Bottle

Global warming is an environmental science topic of much concern. The average surface temperature the Earth increased by 0.6ºC during the 20th century, with the increase occurring mainly from 1910 to 1945 and 1976 to 2000. The 1990s was the warmest decade, and 1998 was the warmest year of the century and on record. Growing scientific consensus attributes this global warming to the enhanced greenhouse effect. In this experiment you and your classmates will investigate the greenhouse effect and the enhanced greenhouse effect.

**OBJECTIVE:** To compare temperature change of heated ambient air and air infused with carbon dioxide.

**MATERIALS: DIAGRAM OF SETUP:(Both the experimental and control group set up)**

**PROCEDURE**:

**DATA TABLE TITLE:**

**GRAPH TITLE:**

**(Draw a best fit line and include a legend)**

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**QUESTIONS:**

1. In the experimental group what was the initial temperature? What was the final temperature?

2. Calculate the temperature change for the experimental group.

3. In the control group what was the initial temperature? What was the final temperature?

4. Calculate the temperature change for the control group.

5. Which gas retains the heat the most? Give quantitative evidence to support your answer.

6. Calculate the slope of the 2 lines. Show your work.

7. Compare the 2 slopes you calculated in #6. What are these slopes telling you about the temperature of the CO2 and the ambient air?

6. How does these results relate to global warming and climate change?

Conclusion: (Discuss results of lab and include evidence from data table. List 2 errors and improvements)—write this on the back side of this paper.